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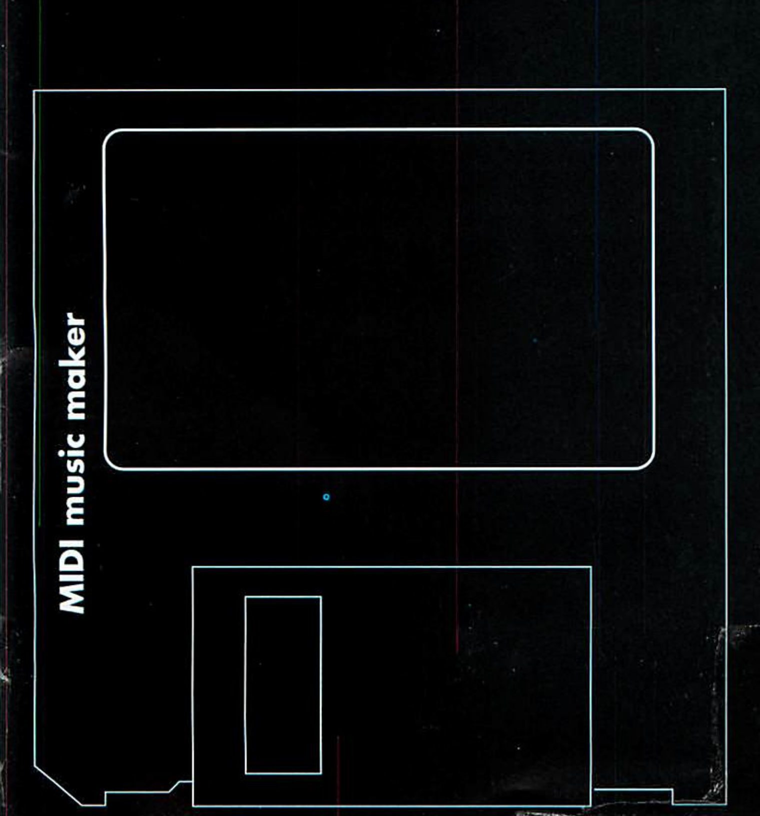
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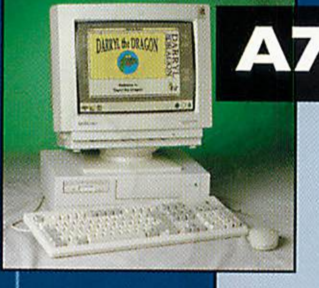
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Next month in Acorn User
We look at another selection of printers. We're also reviewing WimpWorks v2 plus a range of speakers. There'll be hints and tips on enhancing a website and your desktop, as well as all the regulars and the latest news.
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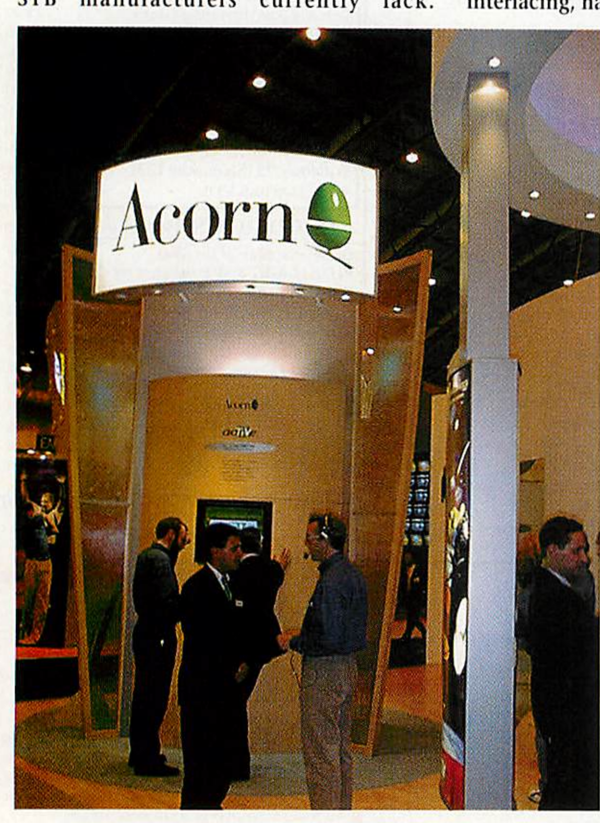


Acorn unveil acTiVe digital TV campaign at Cable & Satellite show

Acorn have returned to the digital set-top box (STB) fray with a vengeance. The disappointment of Acorn's failed first foray into the STB world with Online Media has been forgotten. That pioneering Online Media work hasn't gone to waste either – video server-based services form part of Acorn's new acTiVe offering. At the recent Cable and Satellite industry show at Earls Court in London, Acorn exhibited a comprehensive array of products which they hope will be adopted by famous names in the TV industry.

These include STBs for both satellite and terrestrial broadcast digital TV services which are already available in France and Switzerland and will be coming to the UK later this year. Digital TV will eventually replace conventional analogue terrestrial, cable and satellite broadcasting entirely.

Clearly, this is going to be a huge market. Acorn believe they have the necessary computing know-how to produce leading digital STBs and digital video networking solutions. This is know-how which most of the leading satellite and cable TV STB manufacturers currently lack.



Developments from Acorn include digital STBs with both hardware or software-based MPEG2 digital video decoding. The latter, shown as an early prototype technical demonstrator, attracted the most attention.

While MPEG1 decoding, which is comparable to the quality of a typical VHS video tape player, is fairly straightforward in software form, MPEG2 is a more challenging standard. MPEG2 is much higher in both audio and visual resolution and clarity and other technical considerations of the standard add to the considerable task of decoding an MPEG2 data stream in a stable fashion.

At the heart of Acorn's software MPEG2 development is, inevitably, a StrongARM processor – a 300MHz example, no less. The show demonstration was performed by a very early-looking prototype motherboard and a short MPEG2 video clip was stored permanently in on-board RAM instead of being received from a more conventional source like a DVD player or other video server. The demo looked good even though some obvious enhancements, like non-interlacing, had yet to be added.

Acorn are banking on software MPEG2 being cheaper and more flexible than its hardware-based counterparts. The idea is that only one hardware design will be required by an STB vendor, with regional compatibility accomplished largely through programming. For example, MPEG2 in Europe is different to MPEG2 in the US – they have different audio standards.

A degree of future-proofing is inherent in a software-based approach too. Acorn is using the new StrongARM SA-1500/1501 chip set which includes an AMP (attached media processor) to optimise operations like MPEG decoding.

Ironically, Acorn's gamble on software MPEG2 is at odds with VLSI Technology, one of Acorn's



co-shareholders in ARM Ltd. Indeed, you could say Acorn are pursuing a line of development which challenges ARM's own product strategy. Although StrongARM is a licensed version of the ARM architecture, Digital Semiconductor implemented it in a highly optimised fashion which enabled it to be clocked at very high speeds.

ARM's own versions are yet to match the speeds that StrongARM has reached, but VLSI Technology, which are using 'ordinary' ARM processors in their own STB hardware designs, says they are happy to use the slower option for now and are confident that later ARM generations – ARM9 and ARM10 – will eventually catch up and overhaul StrongARM. Meantime, VLSI suggest that using even StrongARM for MPEG2 in software *is inadvisable*.

They use ARM to run the STB operating system and so-called middleware, the software which will serve as the user interface and host for applications like the electronic program guide. None of these applications is remotely as processor-hungry as decoding MPEG2. Acorn tell us that not only is StrongARM perfectly capable of handling both the middleware applications and MPEG2 decoding, but they will eventually be able to decode two MPEG streams in real time, enabling picture in picture – one channel displayed on the whole screen plus a second inside a smaller window.

Once again, Acorn have the technology and the imagination to do things differently with definite benefits. Acorn are late to the broadcast digital TV market, but they still have a lead in key areas like software MPEG2 and other aspects of STB feature designs. Online Media may be dead but, from its ashes, acTiVe could rise to considerable success. And don't forget, if Chris Cox can make a case for it, any useful bits of technology developed for the acTiVe could easily be made available to us.

news



Fuzzy spreadsheets

ExpLAN have previewed a new kind of spreadsheet package which is designed to deal with 'soft' or 'fuzzy' information. The new package is called *FuzzySheet*. Unlike existing spreadsheets, the cells contain graphic items, adjusters or pictures.

Standard statistical information is provided within *FuzzySheet*, though if you are using more advanced calculations you can export these to a more conventional analysis application. *FuzzySheet* is particularly suited to data-collection of indistinct information. It deals with questions like: "How much do you agree with current Government policy on IT?," – where the answer is supplied by moving a slider to a position between "Strongly disagree" and "Strongly agree."

Another example ExpLAN gives is: "how cloudy is it today?," where an adjuster will alter a picture in the cell which shows clouds covering the sun to a chosen degree.

FuzzySheet will be available in several different formats later this year. ExpLAN are aiming *FuzzySheet* at a couple of markets; their more familiar market in education and also the professional markets like market research and psychological analysis. *FuzzySheet* runs within the Nested Wimp, as supplied with the new Acorn Browser. ExpLAN are confident it will run on both the new Phoebe 2100 and the forthcoming Peanut portable. The latter will be key to *FuzzySheet* users who are likely to require a mobile computer for their data collection activities.

ExpLAN's Paul Richardson can be contacted via e-mail at paul@explan.demon.co.uk

Acorn losses stemmed but the business is still shrinking

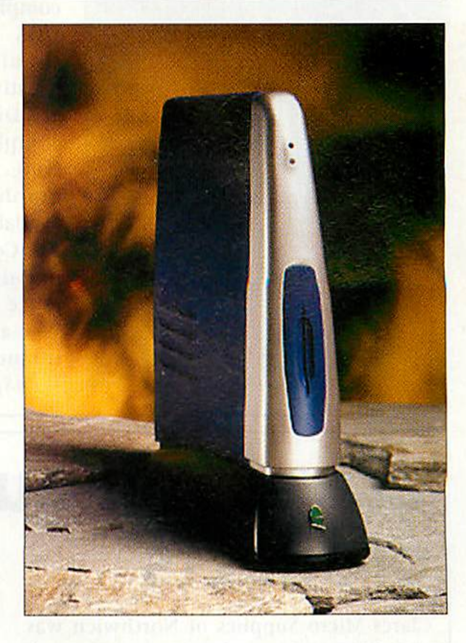
Acorn Group turnover by destination

	1997 £000	1996 £000
UK	14,901	22,758
Europe	972	2,078
Australasia	825	3,048
USA	7,190	1,609
Other	1,304	533

Acorn are still not in profit, but the directors seem happy that the company's transformation from manufacturer and supplier to the education and other retail markets to high-tech consultancy is on the right track and that profitability is on the horizon.

Turnover for the year ending 31 December 1997 dropped by £4.8 million to £25.2 million, a reduction of 16 per cent. Despite the reduced turnover, the 1996 operating loss of £4.8 million was reduced to £3.7 million.

During 1997 Acorn closed their Australian subsidiary, at a cost of over £300,000, though Acorn computers remain on sale there via a local distributor. Xemplar cost Acorn £697,000 in 1996, but 1997 saw an income of £80,000 from



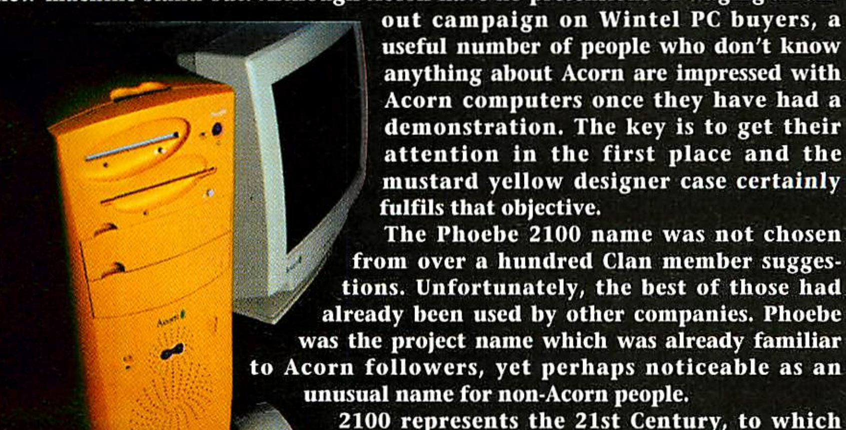
the subsidiary. Income from ARM Ltd increased from £1.57 million to £2 million. 1998 figures will show an income of over £15 million as a result of the recent stock market flotation of ARM.

As the accompanying table shows, the UK remains the biggest source of income for Acorn, largely because of its historical education market. However, that fell substantially in 1997 and income from contracts in the US have risen just as substantially. Meanwhile, Acorn's research and development expenditure rose to £2.86 million, an increase of almost 150 per cent.

This underscores Acorn's transition to a research-led consultancy as well as the cost of developing the new Phoebe 2100 workstation and network computer products like CoNCorde. Are Acorn going to be profitable in 1998? Ignoring the windfall from ARM Ltd – probably not. Acorn are still trying to establish themselves in new markets and income from Phoebe won't arrive until half way through the second half of the year. Maybe 1999 will be the year that Acorn gets back into the black.

It's Phoebe 2100 and yellow

But why? According to Acorn Workstations division chief, Chris Cox, the primary reason for the controversial colour and name choice was to make the new machine stand out. Although Acorn have no pretensions of waging an all-out campaign on Wintel PC buyers, a useful number of people who don't know anything about Acorn are impressed with Acorn computers once they have had a demonstration. The key is to get their attention in the first place and the mustard yellow designer case certainly fulfils that objective.



The Phoebe 2100 name was not chosen from over a hundred Clan member suggestions. Unfortunately, the best of those had already been used by other companies. Phoebe was the project name which was already familiar to Acorn followers, yet perhaps noticeable as an unusual name for non-Acorn people.

2100 represents the 21st Century, to which Phoebe firmly belongs.

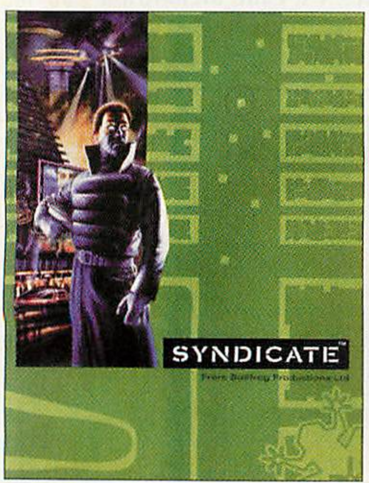


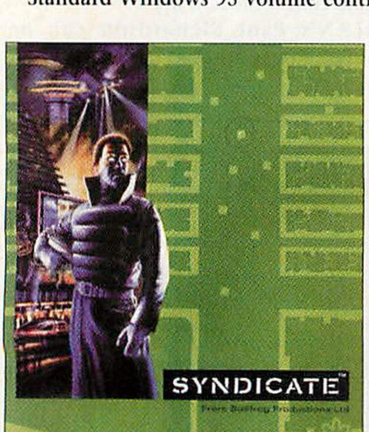
Busy-busy R-Comp

R-Comp Interactive were very busy at Wakefield, introducing a number of new or improved products.

First off from R-Comp we have *PCSound Professional 2* which they say features many extra levels of SoundBlaster 16 compliance, to the extent that the official Creative Labs SoundBlaster 16 drivers for Windows 95 actually detect and use *PCSoundPro* as if the SB16 was there instead. This is good news for Windows 95 compatibility as well as DOS application compatibility when running inside a Win 95 window.

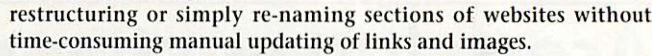
Standard Windows 95 volume controls are also available, allowing adjustment of Wave and MIDI volumes, and MIDI input is supported with any MIDI Support compliant MIDI interface. DOS game enthusiasts should also note that Creative Labs SB16 drivers are DirectX/DirectSound compliant, ready for the time when DirectDraw graphics are finally available for the PC card.





R-Comp also announced updates to most of their range of *HTMLEdit Studio* Web-authoring tools. This includes *HTMLEdit v4+*, *WebSpell* and the *WebsterXL* web browser v1.5 which now has support for frames, tables, Javascript, animation, sound and music, as well as Acorn plug-in compliance for Java.

The company were also demonstrating *SiteMaster*, for re-organising, restructuring or simply re-naming sections of websites without time-consuming manual updating of links and images.



SiteMaster offers tree-views, cross-site search and replace, as well as link and image validation, and other error checking options. Download times can be displayed, sections of sites can be extracted, etc. The full *HTMLEdit Studio* pack costs £105, including carriage to the UK and Europe. *HTMLEdit* v4 will be available on its own with the new manual and packaging, with the option of adding further *HTMLEdit Studio* components at a later date.

R-Comp demonstrated Acorn versions of the top-selling PC games *Quake*, *Syndicate+* and *Abuse*. There was also an ARM3 compliant version of the Acorn *Doom* Trilogy. Existing Acorn *Doom* owners can also expect some more add-ons from the R-Comp website.

R-Comp, tel: 01925 755043, 01925 757377. WWW: http://www.rcomp.co.uk/

Clares roll out new products

Clares Micro Supplies of Northwich was one of the busier companies at the recent Wakefield show, releasing three new products there. They include *WimpBasic 2*, *Rhapsody 4* and a pair of CD ReWriter kits. *WimpBasic 2* is now much faster than its predecessor – apparently as much as 20 times faster if you use the new optimise code option.

Other new features include a redesigned Window Designer with Grid option, the ability to save and re-use icons and new keywords dealing with files and directories, new keywords to load, plot, scale and remove *Draw*. There is also a whole range of keywords dealing with fonts.

Font menus can be easily created and you can check for fonts, set font, size and colour and you can also find the height and width of a font string. There are also new keywords for plotting, moving, hiding and colouring icons. A complete section dealing with Panes, enabling you to open panes, fixed panes and attaching them to parent windows has also been added. *WimpBasic 2* is priced £110 inc. VAT, but Clares are running an introductory discount price for existing *WimpBasic* users of £50 inc. VAT. Others can buy *WimpBasic 2* for £10 off the standard price for a limited period.

Rhapsody 4 is the latest version of Clares' popular music notation packages. Clares say they have attempted to incorporate all the features and ideas suggested by existing users. *Rhapsody 4* is not recommended for pre-ARM 3 computers i.e. A300, 400, 3000, 3010, 3020 & A4000 due to high processing overheads. For more info see the Music page.

Clares' new CD ReWriter kits consists of an internal Yamaha or TraxData SCSI CDRW drive (6x read, 2x write, 2x rewrite), 20 CDR blank CDRs and a pair of blank CDRWs. You also get *CDBurn* software and a CD Label kit.

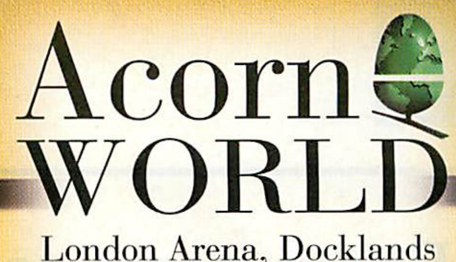
Clares say the extras are worth £170 by themselves. The internal drive package priced £499.95 inc. VAT and the external drive package £549.95 inc. VAT.

For more information, contact Clares at Tel: 01606 48511, Fax: 01606 48512, e-mail: DClare@Clares.demon.co.uk Web:http://www.stcoll.ac.uk/clares/

ARM shows solid growth

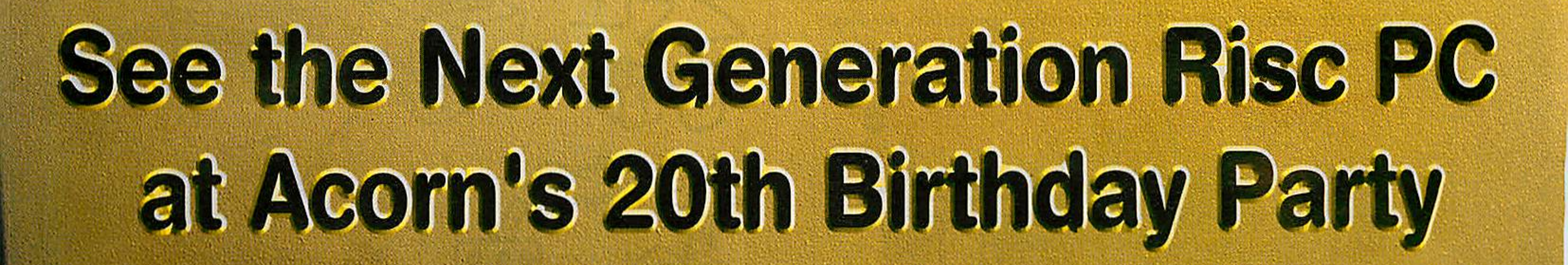
For the first quarter ending March 31 1998, ARM Ltd had revenues of £8.7 million, an increase of 66 per cent from total revenues of £5.2 million in the first quarter 1997, and a 5 per cent increase over fourth quarter 1997 revenues of £8.2 million. Product revenues increased by 68 per cent to £7.0 million from product revenues of £4.2 million in the first quarter 1997 and represented 81 per cent of first quarter 1998 revenues.

Operating income for the first quarter of 1998 was £1.6 million or 19 per cent of revenues compared to operating income of £0.5 million or 10 per cent of revenues in the 1997 first quarter and operating income of £1.2 million, or 14 per cent of revenues in the 1997 fourth quarter. What it all comes down to is that ARM Ltd are now bigger than their Acorn parent and making very healthy profits, thank you very much.



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Four new releases from iSV

DeskLock, *Dr Fonty*, *FairIsle* and *Penulator* are four new releases revealed by iSV Products at the Wakefield show. *DeskLock* adds password protection to named directories and applications. Directories cannot be opened or copied and applications can't be run without the password.

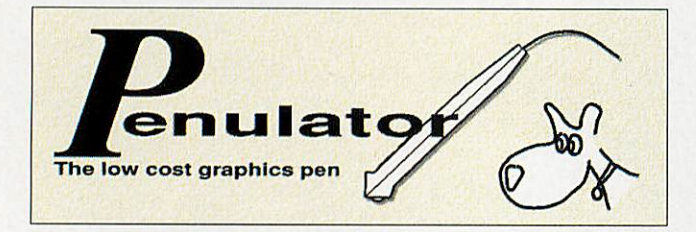
The program also disables the F12 escape route from the desktop to the RISC OS command line. Task windows cannot be run by the user nor can *DeskLock* be removed by an Alt-Break. If a user tries to turn on a machine (A7000/Risc PC) with the shift key down to prevent booting and hence not load *DeskLock* they will find the machine is disabled. *DeskLock* is priced £31.50 inclusive of UK carriage.

Dr Fonty is an enthusiasts version of *FontFiend*, iSV's font editing/designing package. *Dr Fonty* includes many of the features of *FontFiend* but without some of the automatic operations. *Dr Fonty* is also priced £31.50 and a demo version is available iSV's website.



FairIsle is a knitting machine punch card generator. It allows the user to design knitting patterns on-screen with a photo-realistic on-screen knitting sample. Colours can be picked from a dialogue box and designs can be saved in a variety of file formats including *FairIsle Draw* and *Sprite*. Once again priced £31.50, a demo version is also available from iSV's website.

Finally, *Penulator* is a low-cost graphics pen with RISC OS and Windows drivers. *Penulator* can completely replace the mouse or





you can flip between mouse and pen with a single click. *Penulator* also allows freehand drawing directly into *Draw*. It is priced £36.50 including the pen. However, this product does require a minimum of an A7000 or Risc PC.

iSV Products, e-mail: atimbrell@aol.com, WWW: http://members.aol.com/isvproduct/

Ancestry to gain descendants

Graham Crow, the original author of Minerva Software's *Ancestry 1* genealogical database, is to develop and market a new version now that Minerva are no longer continuing this. Graham was responsible for *Ancestry 1*, while a separate author produced *Ancestry 2*. Neither are now being sold or supported by Minerva.

Graham is embarking on a two-part project. The first is to produce *Ancestry+*, a re-write of *Ancestry 1* as a multi-tasking Wimp application with a number of additions and improvements. File compatibility with both *Ancestry 1* and *Ancestry 2* will be guaranteed. *Ancestry+* will be priced £60 and this will be discounted by £10 to *Ancestry 1* owners and £20 to *Ancestry 2* owners.

Ancestry 3 will develop *Ancestry+* into a more up-market and professional genealogy package, while retaining the ease-of-use which characterised *Ancestry 1*.

Additional features will include: GEDCOM import/export, a fully scrollable drop-chart in window, the ability to save all or part of drop-chart as a *Draw* file and there will be a powerful Report Generator to give extensive user-control over output. The price will be £110 or, if you are upgrading from *Ancestry+*, just £60.

Ancestry 3 will be demonstrated at the Acorn World Show in October, and the aim is for it to be released in time for Christmas 1998.

Graham Crow can be contacted at tel/fax: 01600 772532, e-mail: gmcrow @argonet.co.uk, WWW:http://www.argonet.co.uk/users/gmcrow/



ARM predictions

When StrongARM arrived two years ago it blew away its rivals in the ARM family. However, now there are suggestions that StrongARM's lead will not last for ever. When StrongARM arrived Acorn abandoned plans to introduce an ARM8-level processor and the then fastest option for the Risc PC was a 40MHz ARM700.

StrongARM was clocked at a stunning 200MHz, making it instantly five times faster as long as your code could fit inside the processor's cache. But that was two years ago and, according to Moore's Law, a processor's speed will double every 18 months or so. Acorn are now using 300MHz parts and we are told 360MHz processors will be available before the end of the year. But according to Moore's law we should have had 400MHz by now and should expect 800MHz in around a year's time.

There are some in the industry who suggest that StrongARM will fail to live up to the expectations of Moore's law because its silicon implementation is too difficult to scale down as silicon shrinks.

On the other hand, ARM's own RISC cores are said to be ideally placed to reap the benefits of silicon die sizes. ARM's own literature points out that their ARM7TDMI processor has seen a clock speed increase from 33MHz to 77MHz simply through a reduction in the silicon process from 0.6 microns to 0.35 microns. They are predicting 85MHz for chips produced using a 0.25 micron process and over 90MHz when produced at 0.18 microns. These speed increases are completely without the benefit of any architectural changes.

ARM are confident that ARM9 will operate twice as fast as ARM7 at a given silicon process size rate. This means 200MHz and over will be achieved with 0.25 and 0.18 micron silicon. 400MHz ARM chips are expected by ARM shortly after the year 2000. Given that 30MHz was the going rate for ARM6 back in 1994, we should have expected 120MHz ARMs by 1997. ARM certainly got a bit behind at this point, but it looks like they will have caught up by 2000.

Instead it is now StrongARM which has to play catch-up. Its new owner, Intel, have pledged to continue development at full speed, but according to ARM experts we have spoken to, the job of making StrongARM go considerably faster using smaller silicon is not a routine task and technically more difficult than ARM Ltd's own development.

Time, of course, will tell. But whatever happens, Acorn are in the happy position of being able to choose whichever ARM source is the most suitable. Today, it's StrongARM. Tomorrow, it might be ARM10 – which might delight many in Acorn circles as once again Intel will be out of the equation.

New products/upgrades

Product	New features/product details	Price	Contact
Power-Tec Zip Plus driver	* Completes range of drivers for Iomega product range - the Iomega Zip Plus drive * Features both SCSI and parallel port connectors plus enables use of new drive with an Acorn bi-directional parallel port * Requires RISC OS 3.1 or later * May be used with Acorn PC card using DOS or Windows	Zip Plus drive Plus software - £149 ex VAT (+ £10 carriage ex VAT) Driver software - £35 ex VAT (+ £2 P&P ex VAT)	Alsystems Tel: 01420-561111 E-mail: sales@alsystems.co.uk
Acorn Internet	* Front-end app designed to collate !Browse, !Mail and !Connect progs * Configurable for use on all systems with these installed	See website for more details	Bajorasoft WWW: http://www.bajorasoft.demon.co.uk/
Version 1.50 of drivers for NInterface and NInterface pads	* Includes plug-and-play card facility * Upgrades for registered users available by e-mail or post		Stuart Tyrell Developments PO Box 183, Oldham, OL2 8FB E-mail: Stuart@stdevel.demon.co.uk
Olympus digital cameras price cut	* All reduced prices include VAT and the Photolink software	C420L now £299 C820L now £499 C1400L now £999	Spacetech Tel: 01305 822753 E-mail: sales@spacetech.co.uk
Olympus D1000 Digital Voice Recorder	* A pocket device that records your voice with the advantages of the digital format - no tapes or moving parts, no tape deterioration and fast random access to any part of the recording * Supplied with voice recognition software		Spacetech Tel: 01305 822753 E-mail: sales@spacetech.co.uk
Ancient Greeks	* Intro to the history of Greece and its importance in World History * Interactive activities * Photocopiable worksheets * KS2	£40 ex VAT	Anglia Multimedia Tel: 01268-755811 (SCA)

Yellowstone improve IDE drivers

The latest version of drivers for Yellowstone's RapIDE ATA-2 interface – version 2.29 – is now available. This upgrade enables the user to partition and format larger drives (> 8Gb) and also fixes a bug which prevented very small files being saved in the root directory of the first partition of certain sizes of disc. You can download them from the Web at: http://www.yellowstone.co.uk/downloads.html

Yellowstone Electronic Solutions Ltd. Tel: 01582 584828, Fax: 01582 654440. E-mail: sales@yellowstone.co.uk

Latest CDFSFiler beta from PEP

PEP Associates have released their second free beta release of their drop-in replacement for Acorn's CDFSFiler. It's available from their website.

PEP Associates tell us that the registrations for CD-Net support, which was originally supplied through Cumana, have been surprisingly slow. If you have CD-Net and want the latest developments, contact PEP Associates at PO Box 62, Fordham, ELY, Cambs, CB7 5ZD, or register on the Web at http://www.pep-assoc.co.uk/

Liquid Silicon with MelIDI

Liquid Silicon have announced a new version of *MelIDI*, their MIDI sequencer for RISC OS, which was demonstrated at Wakefield by ESP.

New features are: An unlimited number of tracks, support for up to 12 MIDI outputs (192 MIDI channels), drag-and-drop editing, read and write compatibility with industry standard MIDI files (formats 0 and 1).

MelIDI does not require users to learn lots of numbers. Instruments can be selected by name, graphical map displays allow you to simply draw in tempo, pitch bend or any other controller changes using the mouse. There are also powerful transformation functions, including time stretching and/or shifting of patterns.

MelIDI supports parallel and serial interfaces and requires RISC OS 3 and 2Mb of memory. Liquid Silicon stress that you don't need an Acorn as advanced as a Risc PC or a large monitor. A demo and manual are available from the *MelIDI* website at http://wkweb1.cableinet.co.uk/liquid/melidi

Liquid Silicon, tel: 01592 592265, fax: 01592 596102, e-mail: liquid@cableinet.co.uk

Contacting me

You can contact the news page by writing to me Ian Burley at the usual Acorn User address or by e-mail: aunews@idg.co.uk

Epson Scanners

Professional A4 flat-bed and film scanners





- GT5000 - 24 bit colour, 300 dpi optical resolution, connects directly to bi-directional parallel port. **£284.06***
- GT5500 - 30 bit colour, 400 dpi optical resolution, connects to a suitable SCSI interface. **£366.31***
- GT9500 - 36 bit colour, 600 dpi optical resolution, connects directly to bi-directional parallel port or a suitable SCSI interface. Optional transparency adaptor available. **£718.81***
- FilmScan200 - 30 bit colour, 1200 dpi optical resolution, connects to a suitable SCSI interface. Scans 35mm slides and film, including negatives. Optional APS film adaptor available. **£542.56***

Digital Cameras

From the leading *independent* supplier







- Epson PhotoPC 600 - 1024 x 768 resolution, 4Mb memory (expandable), LCD viewfinder, auto-focus, macro, 3x digital zoom.
- Olympus C420L - 640 x 480 resolution, 2Mb memory, LCD viewfinder, auto-focus, macro.
- Olympus C820L - 1024 x 768 resolution, 2Mb memory, LCD viewfinder, auto-focus, macro.
- Sony Mavica FD5 - 640 x 480 resolution, built-in 3.5" disc drive, LCD viewfinder, macro, high capacity Li-ion rechargeable battery pack.
- Sony Mavica FD7 - as FD5 above, plus auto-focus and powerful 10x optical zoom.

24i16 Multimedia Card

Combined 24 bit digitiser and 16 bit sampler

24i16 combines an advanced 24 bit video digitiser with a stereo 16 bit sound sampler. As well as beautiful stills, **24i16** captures Replay movies and hi-fi audio samples. **£472.94***

- Captures brilliant still images from any S-VHS or composite video source, plus Replay movies, and hi-fi audio.
- 1Mb framestore captures still images at full PAL resolution, 768 pixels x 576 lines.
- Replay movies (including sound) can be recorded, image size and frame rate are fully adjustable and are limited only by hard disc and system bandwidth.
- Sound sampler records at sample rates up to 48kHz.
- Hardware video scaling and anti-aliasing, plus real-time control of brightness, contrast & saturation.



Motorised 24 bit colour hand scanner



Presenting a very good reason not to buy a black & white hand scanner. **ColourMobile** is a motorised colour scanner that scans automatically, and works directly from bi-directional parallel ports, so you don't need a special expansion card. It also provides a pass-through port for printers and dongles etc. **£125***

- 24 bit scan head: 16.7 million colours & 256 greys.
- Resolutions from 100 to 400 dpi (interpolated).
- Scan width 104.6mm (4.12").
- Works with printers, dongles & CD-ROM drives.

"Intuitive and remarkably easy to use... scans are outstandingly sharp with excellent colour accuracy... What more can I say?" - Archimedes World.

"The detail is impressive... this is a good scanner for schools and home DTP users." - Acorn User.





Irlam Instruments Ltd, Brunel Science Park, Brunel University, Kingston Lane, Uxbridge, Middlesex, UB8 3PQ. Tel/Fax 01895 811401.
Email: sales@irlam.co.uk Website: www.irlam-instruments.co.uk

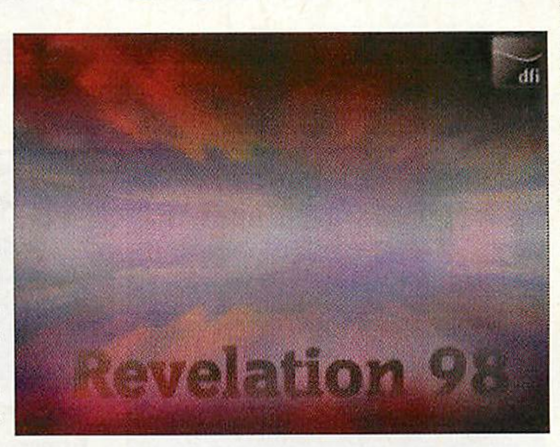
*All prices are for packages fully inclusive of hardware, software, delivery and VAT.
Please note: All products require RISC OS 3.1 or later, a hard disc & 4Mb RAM is recommended. Check suitability for your computer before ordering. All hardware products have full 1 years guarantee. E & OE.





Revelation '98

The official announcement for Revelation '98 is finally here with the release of an excellent graphical intro by DFI. The event will be held over three days at this year's Acorn World show. If current plans go ahead, the demo competition will air in the auditorium on Saturday afternoon and will be accompanied by a special Revelation stand. The idea is to provide free access to machines on the stand throughout the event. This will act as a focus for the demo crews and demo watching sceners to get involved in events and talk PD.

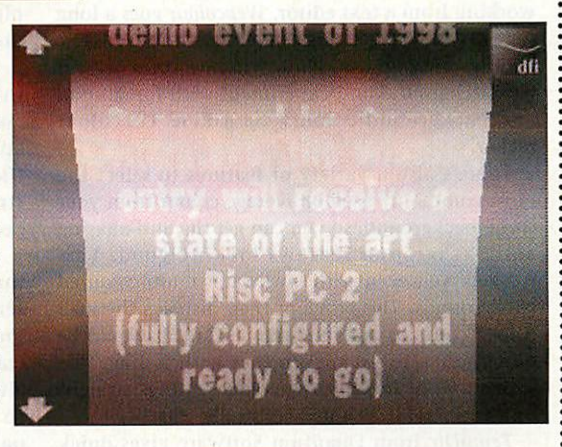


This year's demo competition looks set to be even bigger and better than last year's. The main Risc PC demo competition features the star prize of a fantastic Risc PC 2 from Acorn, as well as a host of other prizes from sponsors like *Acorn User*'s very own PD page! This should draw in a wealth of competition on all levels.

The organisers are quick to point out that this is a non-profit event and is being organised purely to encourage the Acorn demo scene. As well as the main demo competition there will be a number of other competitions. As with last year, there will be a Protracker and Digital Symphony music competition and there are plans for an "at the show" coding competition. Details are yet to be finalised.

The *RevInvite* intro code takes the form of zooming multi-coloured planes as a background, with a transparent scroll in the foreground to display the competition details. The scroll hovers over the screen and zooms in and out as you scroll it up and down – just the kind of cool coding we've come to expect from DFI. With music from Gauge, last year's winner of the Revelation music competition, it's a great production to announce this year's event.

To check the latest news, point your Web browser to http://www.argonet.co.uk/acornshow/rev/ or watch this column.



DrawGen

Many people are quick to criticise the range of development tools available on the Acorn. Without commercial development kits, programmers have to write everything by hand, leading to long application development times. While this is true in some areas, the wealth of PD software available is so often overlooked.

An example of the kind of tool on offer is Dr. Lesurf's *DrawGen* module. *DrawGen* provides a set of commands to create *Draw*files very simply. You can work from any language, including BASIC and C, and the technical work required is minimal. Even working in C, all that is necessary is to set up a .h file, read up on a couple of *DrawGen* commands, and you're away.

The ease of use of this program is its real selling point. The aim is to make *Draw*file use no effort at all, so that people can incorporate *Draw*file creation into their programs, perhaps as export facilities, without having to delve into the complex *Draw*file format. *DrawGen* does all this with ease, and other than the minor problem of one or two ambiguous points in the documentation, comes highly recommended. Find *DrawGen* on Arcade BBS.

Website frenzy

Check Peter Daniel's excellent collection of PD utilities and games, including that essential blast from the past, *Frogger*, on his website at http://compsoc.man.ac.uk/~ulkesh/peter/

Thomas Leonard has recently updated his collection of utilities on his Web pages at http://www.ecs.soton.ac.uk/~tal197 Watch out for *AltTab*, Thomas's easy-to-use version of *CoolSwitch*.

PD programmer and Acorn scene dude, Paul Raine, has an interesting collection of utilities on his website at http://www.gerbilsoft.demon.co.uk Paul highlights "the likes of *RiscEdit*, which allows you to customise your start-up sequence on RISC OS 3.5/6, and the infamous *Polly* application (my dog in a window)" not to mention *PutDir*, reviewed last month.

Finally, check out Jon Ripley's Stryker Software section on Arcade BBS, for his collection of utilities that includes *Anti Exit*, which I erroneously mentioned was in the utilities section of Arcade in the May issue.

Miracle

Richard Talbot-Watkins has produced an excellent ARM code version of the popular Master System emulator. As Richard explains "Until recently, it was impossible to play the majority of Sega Master System games on your non-StrongARM Acorn machine. Now thanks to a completely Acorn specific Sega Master System emulator, written in 100 per cent hand-optimised ARM assembler, anyone with an Acorn machine (and the original carts) can enjoy all those Sega classics."

Miracle can be found at http://www.willothewisp.demon.co.uk/SMS on the Web. Although a flagship emulation product, this really is just a drop in the ocean of the fast developing emulation scene on the Acorn. For more information, check out Dave Sharp's excellent emulation Web pages at http://www.come.to/emulate which I really can't praise enough.

Ooops

Apologies for a mis-quoted URL in the May issue. To see Andrew Ayre's *Dr Wimp* software on the Web, point your browser to http://www.ecs.soton.ac.uk/~aij295/groover



DTP news

PD column regular, Dave Thomas, is currently working on *Photofiler*. As Dave describes, the application will be "a Sprite/JPEG/DrawFile thumbnailer and directory sprite utility which integrates directly into the Filer." Release details have yet to be decided, but watch out for a full review here when Dave completes it. Also note, Dave's new website URL at http://www.tristone.co.uk/davespace/

Kulture news

After many years of writing software for the Acorn PD scene as part of the PD groups Quantum and now Kulture, I'm finally hanging up my Acorn coding boots to concentrate on a career in computer games at Gremlin Interactive.

I'm not abandoning the Acorn scene however, as I'll still be managing Kulture and as always doing my best to encourage the PD scene from my position here at *Acorn User*. Current Kulture projects should still be going ahead as planned, with development of the *Scorpion* graphics engine coming on a treat.

If all goes well, the long delayed screen-saver package, *Delirium*, should be making an appearance soon. I'd like to take this opportunity to say a big thank you to all the people who've supported us over the years and, as always, I look forward to seeing you at the next Acorn show.

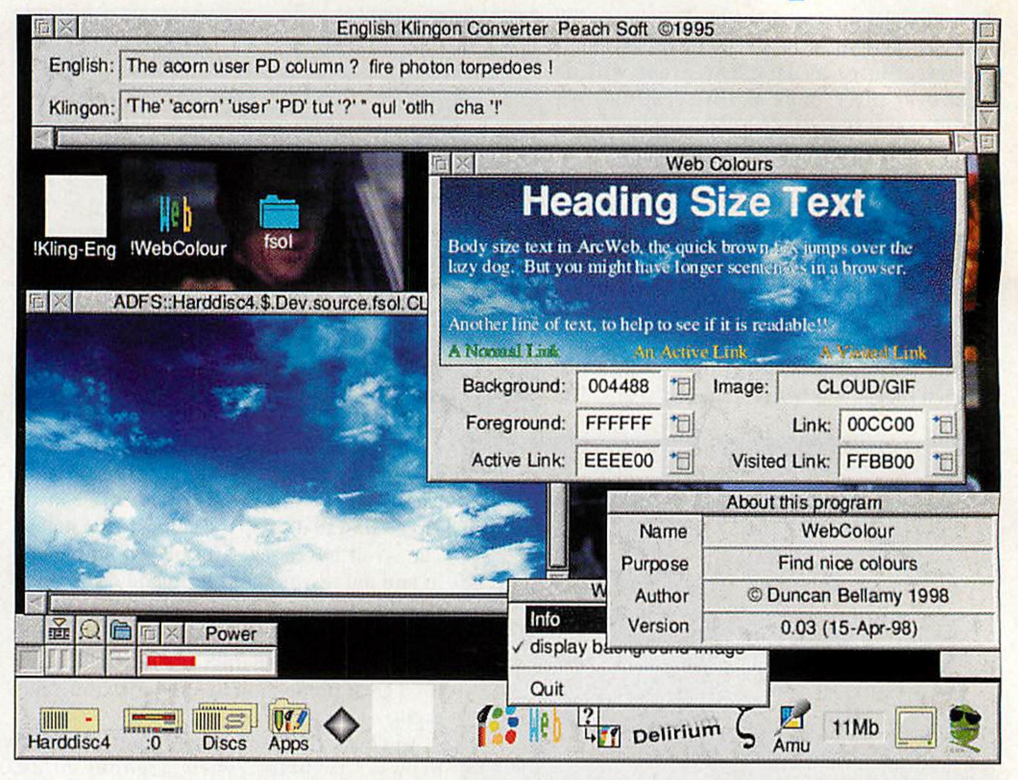
WIMP coding

Following my review of *Dr Wimp* and appeal for comments on this and other similar programming aids, I've had several very positive e-mails from beginners who wish to recommend *Dr Wimp*. I'm still very interested in hearing more opinions on this genre of software, so if you've experienced a good or a bad library or aid for WIMP programming, please drop me a line and tell me about it. Thanks again to those that got in touch.

Contacting me

You can contact the PD page by writing to me, Paul Wheatley, at Acorn User, IDG Media, Media House, Adlington Park, Macclesfield, SK10 4NP. Or preferably, by e-mail to aupdpage@idg.co.uk.

Utilities round-up



Webcolour is a nifty little utility that provides a welcome aid to Web page design. If you're working from a text editor, *Webcolour* goes a long way to making design aspects much easier. Simply bring up the colour window, drop in your GIF background and experiment with foreground and background colours via a RISC OS colour picker.

There's also a variety of features to select the most commonly used or average colour from your sprite background, so you can get the anti-aliasing and background redraws looking good. This worked well even with 'awkward' multi-coloured backgrounds. The program then displays the RGB colour codes to put into your HTML. It would be nice to take this a step further with a draggable icon so you can drop the colour settings straight into your HTML in a text editor like *Zap*.

TempDir from Quantum Software gives quick access via an iconbar icon to a temporary directory. It's quite neat and even incorporates the automatic creation of date ordered directories, but I still prefer Andrew Kemp's fantastic *PinFilter* utility. This does exactly the same process but via the pinboard. Any save icons without pathnames that are dropped onto the pinboard are saved into the *PinFilter* temporary directory. Essential.

TestPoll, incorporating *PollWord*, allows interrupt routines to call tasks through the *PollWord* module – very useful for calling server applications from interrupts. *Strings*, by Stuart Hickinbottom is a command line utility that lists strings in a passed file. Ideal for those UNIXy people among you.

And to round off, a silly from Richard Peach that converts English text into Klingon. I can't really appreciate this one to the full as I find Trekkie things rather dull but if you're a fan, go crazy. I did test with a few words however, and although "fire photon torpedo" translated nicely to "qul 'oth peng", "warp speed" was only partially successful. With these kinds of dictionary shortcomings, using this program and relying on the reply could be a bit of a problem. Make sure you test it out before entering a battlefield situation...

All utilities can be found on Arcade BBS

AntiWord

Adri van Os has created a very handy utility to convert Microsoft Word documents to text files.

Dropping a Word doc onto the *AntiWord* iconbar icon opens a viewer window with the converted text. Either browse the text natively or export as text to drop into your wordprocessor or editor. If you aren't using *EasiWriter* which supports Word file import, this can come in very handy. For those of you who are forced to rely on PCs as well as your trusty Acorns, point your comms software to Arcade BBS.

The challenge

This is the new Acorn workstation developed to supersede the phenomenally successful Risc PC. Phoebe builds on the strengths of the Risc PC and has new features to provide superb performance and upgrade flexibility.

- Full potential of StrongARM is harnessed
- Support for several StrongARMs
- PCI support
- Updated I/O to modem standard
- Best possible graphics performance
- Enhanced RISC OS functionality *(RISC OS 4 includes support for long filenames, less complex !Boot sequence, enhanced configuration options).*
- Existing RISC OS applications will run

New case (as opposite)

This new case builds on all of the good points of the existing design and includes many more:

- 3 podules
- 4 Built-in PCI sockets
- 230W PSU
- No screws required to access
- Peripherals are separate from the main system
- New EIDE hard disc interface for up to 4 drives

PHOEBE 2100

The *new* Acorn for the millenium

Ordering your Phoebe

If you'd like to reserve your place in the queue, complete the form below and return it to us as soon as possible. The deposit of £100 will be banked, and the balance (£1399 + VAT without monitor, £1619 + VAT with monitor) will be due when the machine is released (around September).

A new finance scheme - 0% finance over six months, will be introduced allowing for easy payments and, with every Phoebe, we'll give Sleuth 2 OCR, and an extra 32Mb of RAM.

Buy from the dealer you can trust. As Acorn's longest established dealer with a history of technical support second to none, we'll support you in the years to come.

For more information on Phoebe, call and ask

Order Form

Please put me into the queue for Phoebe. I enclose the deposit of £100 inc VAT, which will be banked, in the form of cheque/postal order (made payable to BEEBUG Ltd) or please debit my credit card:

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Tel: 01727 840303 Fax: 01727 860263 Email: sales@beebug.co.uk

All prices and specifications are subject to change without any notice. E&OE.

ADSL – the high speed highway

During my spring holiday in the United States my host in Denver, Colorado told me about new Internet services being offered by his telephone service provider, US West. Asymmetric Digital Subscriber Line or ADSL, is the new technology that offers existing telephone subscribers multi-megabit data speeds up to 250 times faster than conventional modems and provides a continuous "always on" connection to the Internet over ordinary copper phone lines.

Services from US West will start from $40 (£25) a month, giving continuous Internet connection at 256K bits/second via a special modem, down the same line but independent of the normal wired POTS (Plain Old Telephone Service). Further ADSL "Office" and "Business" options are available up to their "MegaBit" service for business and hardcore Internet customers of 7 Mbits/s downstream and 1 Mbits/s upstream access, all at affordable flat-rate prices.

The data speeds obtainable using ADSL technology are dependent on the length and quality of the copper phone line between the subscriber and the digital exchange, but are typically many times faster than standard modems and even ISDN connections. So when can we have this wonderful technology in the United Kingdom?

ADSL technology described at http://www.adsl.com/

British Telecom have already announced a major trial of ADSL services in West London later this year, working closely with suppliers Fujitsu and Alcatel. BT are also supporting development of DSL Lite, a lower-cost development of ADSL technology which reduces the customer's end equipment to just an internal PC card, and can give speeds up to 30 times faster than most existing modems.

UK Cable TV and telephone companies are understandably wary of ADSL as it offers stiff competition to their forthcoming high speed services using cable modems on their new co-ax and optical networks. Cable and Wireless' Network 2000 project plans completely new network and service layers where bandwidth is no longer an issue and TeleWest's Cable Internet predict cable modem data rates between 10 and 30Mbits/s.

Whether we're already connected by copper or cable, what we want to know now is how soon can we have these high speed connections, and at what cost?

Phone Margaret for a floppy

If you're a British Telecom subscriber, like me you are being deluged with special offers and leaflets describing their latest customer services and that confounded list of recommended new "Family and Friends" numbers that makes you think they've changed all your careful choices.

One very useful facility seemingly only known to a very nice lady called Margaret, the BT Call Base advisor, is that your telephone billing information can be supplied on floppy disc. It comes on a PC disc in CSV (Comma Separated Value) format for easy import into your favourite Acorn data processing application, or *MS Excel* or *Access* if you must.

You can ask Margaret all about it by dialling 0800 622 064; then ask for the Call Base desk. The service costs £15 per quarter, but BT may shortly reduce the fee to around £5 to stimulate interest. You can even try it for just one quarter if you wish.

Register by dialling 0800 112 991 and the disc will arrive a few days after the paper copy of your next bill. Then you'll be able to present the kids with their own personalised bills which should pay for the service!

Numbers of the beast

Can it just be coincidence that Demon Internet, Britain's biggest independent Internet service provider whose subscribers dial in on numbers ending in the digits 666, has been sold to Scottish Telecom for £66 million? It now has nearly 200,000 subscribers – I wonder if founder and now ex-Managing Director Cliff Stanford's millennium target of one million dial-up customers will be achieved? Something tells me it will reach at least 666,666.

3D seen with Fresco©

Two free ways to enjoy VRML (Virtual Reality Modelling Language) worlds on the Web using Acorn browsers are reported by James Carey. *VRMLeyes* by Aspex software is available from their website at http://www.aspexsoftware.com/ and their later version 2.0 engine is under development. Spacetech's website at http://www.spacetech.co.uk/it/freeware/VRML.zip offers *TMViewer* from Sincronia which can provide a drag and drop URL interface that ANT's Fresco© can fetch.

Vital statistics

Having recently been shown the yellow card over my blood pressure and body weight, I discovered there's a commercial UK website with a nifty calculator page that shows one's personal profile of target Aerobic training Heart Rate, Body Mass Index (the ratio of one's weight to height) and Ideal Weight. You enter your age, height and weight in feet, stones, metres or kilograms and the results and comments on them are shown. The recommended maximum Body Mass Index is 30; the page calculated my personal index to be 29.7; oops!

Online Digital Fitness Solutions Ltd
http://www.odfs.com/

Contacting me

Keep sending David Dade your interesting URLs for the next yoUR List by e-mail to david@arcade.demon.co.uk or mail #2 on Arcade BBS 0181 654 2212.

Davyn Computers

Tel: 01924 254800 Fax: 01924 258036
E.Mail: sales@davyn.demon.co.uk
WEB: http://www.davyn.demon.co.uk

Bargain Basement

Alderbarron	(Evolution)	£5.00a
Apple FS	(Oragan)	£20.00a
Boxing Manager	(Krisalis)	£5.00a
Corruption(Magnetic Scrolls)		£5.00a
Frame-It 1 or 2 (Davyn)each		£5.00a
Publisher irregular frames		
Hero Quest	(Krisalis)	£15.00a
Landmarks full range(LL)each		£28.00a
Music Box	(Topo)	£20.00a
Number Tiles	(Topo)	£17.00a
PhotoBase1930s,50s,60s Each(LL)		£39.00a
Prime Mover	(Minerva)	£20.00a
Pro Artisan 2	(Clares)	£90.00c
Pro Driver	(Ace)	£10.00a
Science Series CDx3 (YITM)		£40.00a
Small	(Virgo)	£15.00a
SmArt	(4Mation)	£37.00a
SmArt Files	(4Mat)each	£17.00a
SmArt File Mod.Lang.(4Mat)		£21.00a
StartWrite	(AP)	£8.00a
Tiny Puzzle	(Topo)	15.00a
Waiter	(Digital)	£15.00a

Spares & Repairs

A300/400		
backplane 2/4 pod	S/U	£30.00b
memory upgrade 2mb	new	£79.00a
memory upgrade 4mb	new	£89.00c
Power Supply	Refurb/Exch	£40.00c
A400/1		
backplane 4 pod	S/U	£30.00b
Floppy Drive	S/U	£30.00b
memory upgrade 1mb	new	£35.00a
Power Supply	Refurb/Exch	£40.00c
A3000		
Floppy Drive	S/U	£30.00b
High Density Floppy Drive	new	£90.00c
Keyboard	S/U	£20.00b
memory upgrade 2mb	new	£39.00a
memory upgrade 4mb	new	£65.00a
PCB	Refurb/Exch	£90.00d
Power Supply	Refurb/Exch	£30.00c
Power Supply	Refurb	£40.00c
A3010		
Floppy Drive	new	£89.00c
Keyboard	S/U	£20.00b
memory upgrade 1-2mb	new	£34.00a
memory upgrade 1-4mb	new	£65.00a
PCB	Refurb/Exch	£120.00d
A3020		
Floppy Drive	new	£89.00c
Keyboard	S/U	£20.00b
memory upgrade 2-4mb	new	£59.00a
PCB	Refurb/Exch	£120.00d
A4000		
Floppy Drive	new	£90.00c
Harddisc 210MB IDE	S/U	£80.00c
memory upgrade 2-4mb	new	£59.00a
PCB	Refurb/Exch	£120.00d
Power Supply	Refurb/Exch	£40.00c
A5000		
Floppy Drive	new	£99.00c
Keyboard inner	S/U	£20.00b
memory upgrade 2-4mb	new	£79.00a
PCB	Refurb/Exch	£139.00d
Power Supply	Refurb/Exch	£40.00c
RPC		
PCB MK 2	Refurb/Exch	£149.00d
Power Supply	Refurb/Exch	£60.00c
Fits All Computers		
IDE/CD interface	new	£69.00c

These are just a small selection of new and refurbished spares ring for details

Printers

Canon		
BJC-250	(colour)	£139.00d
BJC-4300	(colour)	£169.00d
BJC-4650	(A3 colour)	£299.00d
BJC-620	(colour)	£249.00d
Epson		
Stylus 400	(colour)	£169.00d
Stylus 600	(colour)	£219.00d
Stylus 800	(colour)	£299.00d
Stylus 1520	(A3 colour)	£729.00d
Hewlett Packard		
DeskJet 400L	(colour)	£109.00d
DeskJet 690C	(colour)	£199.00d
LaserJet 6L	(Black)	£329.00d
Calligraph		
A4 1200 Laser	(black)	£1099.00d

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A refill system with no mess
Comprises: CartridgeMate & 2 x 40ml

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HP Laserjet 5/6L Toner	£54.00c

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Colour'n Wear (2 white T Shirts + 4 transfer papers	£13.50b
Colour'n Wear (4 transfer papers only)	£9.00a
(10 transfer papers only)	£13.50b
Design & Print Mouse Mat	£4.00a
Col Inkjet matt photo white paper 25 sheets x 120gms	£5.50b

Scanners

Epson GTX5000 parallel	£199.00d
Epson GTX5000 scsi	£299.00d
Epson GT9500 para/scsi	£539.00d
Image Master/Twain Driver	£35.00a

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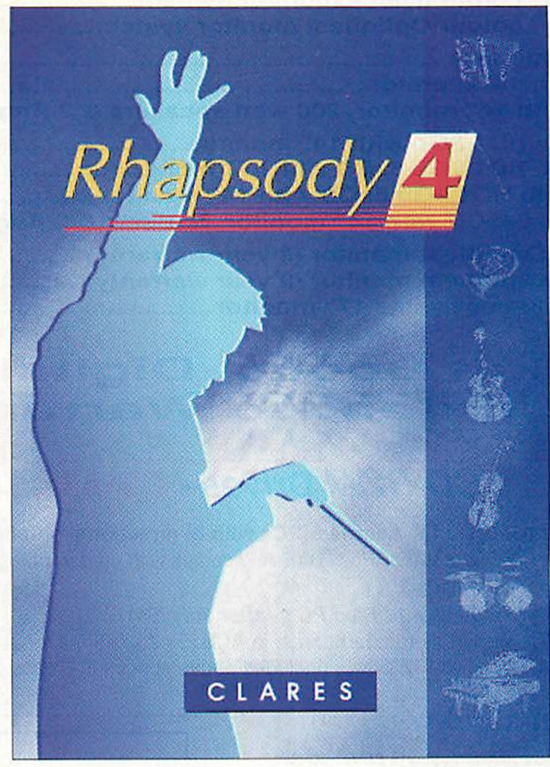
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An ongoing Rhapsody

Rhapsody, one of the most established music programs available for the Acorn platform, has just undergone a major revamp and recently been released in its fourth incarnation. Sold by stalwart developer Clares, previous versions of *Rhapsody* have been one of the most popular score notation packages for RISC OS. While it wasn't quite in the same league as *Sibelius 7* (then again, what is?) it was still a much used program and was popular in schools where its simple interface made it an ideal choice.



The new *Rhapsody 4* improves upon previous versions in many ways, not least of which is a complete rewrite of the program. Clares are very keen to stress this point and I quote "only the name remains from earlier versions of *Rhapsody*". New features are extensive and include a new file format, many new musical symbols, draggable space for incorporating lyrics onto a score, a greatly improved selection panel and a clickable list of common musical terms for entering into a score.

The program can be configured in many ways and there is even an option to set the program to operate in different modes for different types of user – Beginner, Standard and Advanced. The quality of printed output should get a significant boost with features such as full use of outline fonts, compatibility with Optical Manuscript to allow scanned music to be automatically read in, and kerning and micro adjustment of notes and objects for improved presentation.

Finally, the MIDI side of things has been greatly enhanced and now boasts an 'expression' option to add feeling to your music, a MIDI event editor, full support for General MIDI and bank change messages and completely automatic quantization. For those of you prone to making the odd mistake, a single step undo facility allows any mistakes to be removed easily.

Rhapsody 4 is available now from Clares Micro Supplies for £135 inc. VAT. There is a special introductory price of £99.95 for a limited period although you should check with Clares first to see if this is still available.

Clares can be contacted at 98 Middlewich Road, Rudheath, Northwich, Cheshire, CW9 7DA. Tel: 01606-48511 Fax: 01606-48512 E-mail: sales@clares.demon.co.uk WWW: http://www.stcoll.ac.uk/clares/

Making Trax

Just when things were starting to get a little quiet in the Acorn music world, things start hotting up again. This month there's a brand new MIDI sequencer called *TRAX* from an equally new company Trax Software.

Peter Goodlife, the person responsible for Trax has been working on the project for some time now, but he's only recently decided to start marketing the fruits of his work.

TRAX is a multi-track sequencer (hence its name) and uses a pattern-based system much in the same way as Oregan's *MIDIWorks*. The interface is clear and simple and anyone who has used RISC OS should be able to get to grips with the program easily. The manual even goes as far to say that seasoned RISC OS users might not even need to read the manual!

Even though it is a first release, *TRAX* is a surprisingly comprehensive program and already contains useful tools such as MIDI filtering and note quantizing. New features are planned for the next release and these will hopefully include Piano Roll Editing and Drum Roll editing.

Perhaps the best thing about *TRAX* though is its price, which is only £20 without a manual or £25 with a manual. I'd almost be tempted to say that you don't really need the manual, but at only £25 you can hardly go wrong. Version one of *TRAX* is available now from Peter Goodlife at Trax Software, 9 Roland Close, Cambridge, CB4 2DJ. E-mail: info@trax.arachsys.com WWW:http://www.trax.arachsys.com

Yamaha speak out

If you have a machine such as an A7000 or a 16-bit sound card fitted in your computer, you're just the sort of person who needs a pair of Yamaha's new speakers. Designed especially for desktop use the YSTM100 'combines the finest sound quality with a classic wood finished design' i.e. they're ideal for music and audio applications.

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So, what's the cost? It is in fact a rather hefty £119 (inc. VAT) although if they're anything like Yamaha's usual speakers, it will be £119 well spent.

Yamaha can be contacted on 01908-369259, fax: 01908-368872 or e-mail: media_tech@infomta. post. yamaha.co.jp

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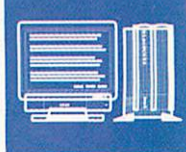
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Back to discs

According to Aleph 1 the single most common problem with looking after your PC card is that of disc space – chances are that you will very quickly run out. Having set up what at first seems like a decent sized partition, the ever-increasing profligacy of Windows software will eat it up, or you'll be faced with having to do only partial installs of software that really would benefit from more of its software resident on disc. Here are two possible solutions.



First, can you expand your existing drive-c partition without losing everything on it? The simple answer is not directly. But there are two ways around this. The legal and safer way is to copy everything you have into a new drive c.

Here's how. You could use backup software to store the entire disc contents, delete the existing partition, make a new one and re-install. But I'm assuming you don't have that software so here's what you do.

First, find enough disc space for your new partition before you delete the old one. Assuming you can do that, create a second partition to be called NewDrv_C (make sure it isn't the same name as your existing drive D!). Start up *!PC*, then use Xcopy or the windows file manager to copy everything from Drive_C to NewDrv_C. Quit *!PC* and set drive_c in !PCConfig to NewDrv_C.

But you are not done yet as your new Drive-C isn't bootable. So use a DOS floppy to boot up (remember to allow booting from floppy in Config options), then run fdisk (just type fdisk<rtn> at the command prompt), then use the options to make the primary partition active (but don't alter partitions, format etc). You should now be able to boot from NewDrv_C. If so, delete your old drive_c and reset !PCConfig to access your old drive_d if you had one.

The alternative is to use a piece of software called *Presizer* that can be found on Aleph 1's website. They don't actually recommend it as it has apparently been known to trash partitions once or twice, but it may be useful especially if you don't have enough space to use the technique above.

Presizer performs the neat but dangerous trick of rewriting the file allocation table, leaving the data on your drive_c exactly where it is, but expanding the partition across more of the disc. I haven't tried it but others have used it with success.

Aleph One
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Jaz success

My office machine has been equipped with a Jaz drive for a while serving RISC OS. But with new software coming from Aleph 1 at a rate of knots, I decided it was time to try to make it function within Windows too. There were two major hurdles to this, the first being that the driver software used long filenames, inaccessible to older versions of *!PCPro*. Second, it's a SCSI drive that needed an ASPI driver. Solutions are now available to both problems.

I'm glad to say the system is now functioning apparently very happily. Getting it up-and-running involved installing the SCSI Miniport drivers from Andreas Walter into the (at present beta test) *PCPro2.22* and then getting the Iomega software to recognise the disc. If I'd known what I was doing it would have been easy. Even without knowing, it worked in the end.

One mistake I made was to assume the disc needed to be selected as a Direct SCSI drive_D in *!PCConfig*. In fact this is wrong as the system then treats it as a standard hard drive – not what you want. Instead you should ignore it in *!PCConfig* and it then appears on your My Computer screen as a Jaz drive and given a letter after the CD.

Curiously the other problem I've had is that somewhere along the line another CD driver has appeared, leaving me with two icons for one CD! I've disabled one of them and now things appear to be working normally.

Incidentally parallel port versions will also run quite happily I hear. So if disc space is a problem, there's one very useful solution!

Using your floating point processor

If you have any PC card after the original 486 SX, you may not know it but you do have a floating point processor in your machine! The trouble is it's stashed in the PC card. Warm Silence have a solution, it's called FPEPC and it makes the co-processor available to RISC OS.

It claims up to a 100 times faster processing of some tasks (for example, complex graphics) with ARM 6 or 7 hardware. Unfortunately it has little effect on SA equipped hardware. It also cannot function if the PC card is in use, but it turns itself off so you don't have to worry about possible conflicts. It costs £35.25 inc VAT from Warm Silence Software who can be contacted on 0585 487642.

Latest on !PCPro

As I write, the new versions of the software are still being tested and bugs ironed out. But suffice to say that work on the software appears to have accelerated recently with support for VESA up-and-running, probable support for DirectX, 32-bit addressing and the new miniport version of the SCSI software. Things are definitely looking up. If you haven't upgraded to *!PCPro*, (and many haven't) this option really should be on your 'to do' list now.

Where next with RPC2?

Aleph haven't made any public announcements about PC card support for RPC2. But with a PCI bus available, and considerable interest in PC cards, this is under consideration. The 32-bit, 33MHz PCI bus means that it may be possible to source an existing commercial card and offer performance figures appropriate to current PC chips. Naturally some software along the lines of *!PCPro* will be necessary. No public pronouncements yet, but again this is being investigated.

Contacting me

You can contact me, Mike Buckingham, by post at: *Acorn User*, Media House, Adlington Park, Macclesfield SK10 4NP or by dropping me an e-mail at: aupcpage@idg.co.uk



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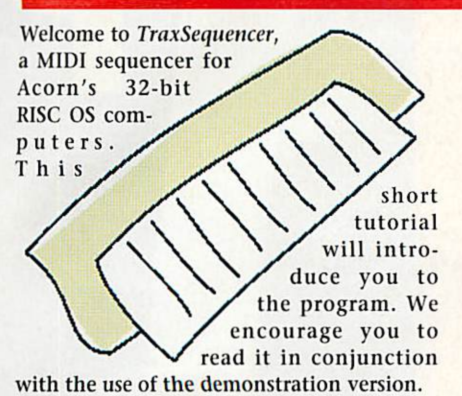
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TraxSequencer

Trax Software



Welcome to *TraxSequencer*, a MIDI sequencer for Acorn's 32-bit RISC OS computers. This short tutorial will introduce you to the program. We encourage you to read it in conjunction with the use of the demonstration version.

TraxSequencer fully supports interactive help, so load the built-in *!Help* application to obtain information about any window or button.

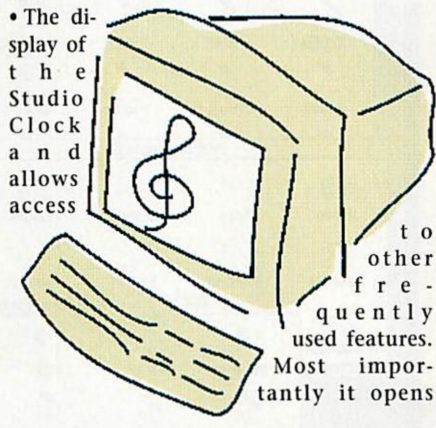
You can load *TraxSequencer* in the normal RISC OS manner by double-clicking on its Filer icon. Double-click on a *TraxSequencer* song file or click on the iconbar icon to open *TraxSequencer's* main window, the Song Window.

Song window

This window shows the layout of the song and consists of several components. The Play, Stop, and Record controls at the bottom of the window allow you to playback or record the current song as you would expect.

The toolbar at the top of the window controls (among other things):

- The action of the mouse pointer
- The display of time signature and tempo tracks
- The display of the Studio Clock and allows access to other frequently used features. Most importantly it opens





the Phrase List Window. This is part of *TraxSequencer's* advanced song structure.

Song structure

TraxSequencer employs an object-oriented, linear song structure – rather than record music directly into the tracks, you record phrases of music that can be used in the song's Tracks at any time.

In *TraxSequencer* the Phrases don't physically exist in the Track but in the Phrase List, which is akin to a palette of musical phrases, each with its own unique name.

To make a section of a Track use the music in a Phrase you place a component called a Part in it. As many Parts as necessary may use a certain Phrase, even none. Parts have additional features that allow the music in the Phrase they use to be altered in real time, for example, repeat, transpose and quantise effects.

Parts appear in the Song Window as shown above, and can be moved, resized or copied. Their parameters can also be altered by double-clicking on them to open the editor shown below. Depending on the pointer mode they can also be cut in two, joined together or inserted. The Phrase which a Part uses can be altered using the Phrase List Window.

Editing phrases

Naturally *TraxSequencer* allows you to edit the music in a Phrase. Select the Phrase in the Phrase List Window, and click on the Edit button, or just double-click on the Phrase's name.

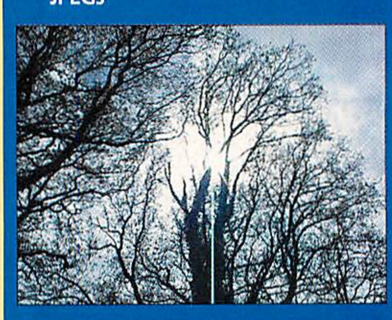
Currently only List Edit and Step Edit is supported in this version, but Piano Roll Edit and Drum Edit will be added in subsequent versions.

The pane to the right of the Phrase Editor Window allows you to alter the type of editor – while editing – and accepts or rejects the alterations. It also allows access to the Phrase Procedures, a library of filters and effects that can be applied to your music.

Further details, pricing and contact information is in the help files on the disc.

Demos and Freeware

- MavicaFS – displaying Mavica's JPEGs



- ThinTools – making the furniture smaller

Regular items

- Mike Cook's soft oscilloscope
- All the *INFO programs

Disc information

The software on these discs has been compressed using *ArcFS 2* from VTi, and are opened by running a copy of *ArcFS* then double-clicking on the archive to open it. There is a copy of *ArcFS* on each disc.

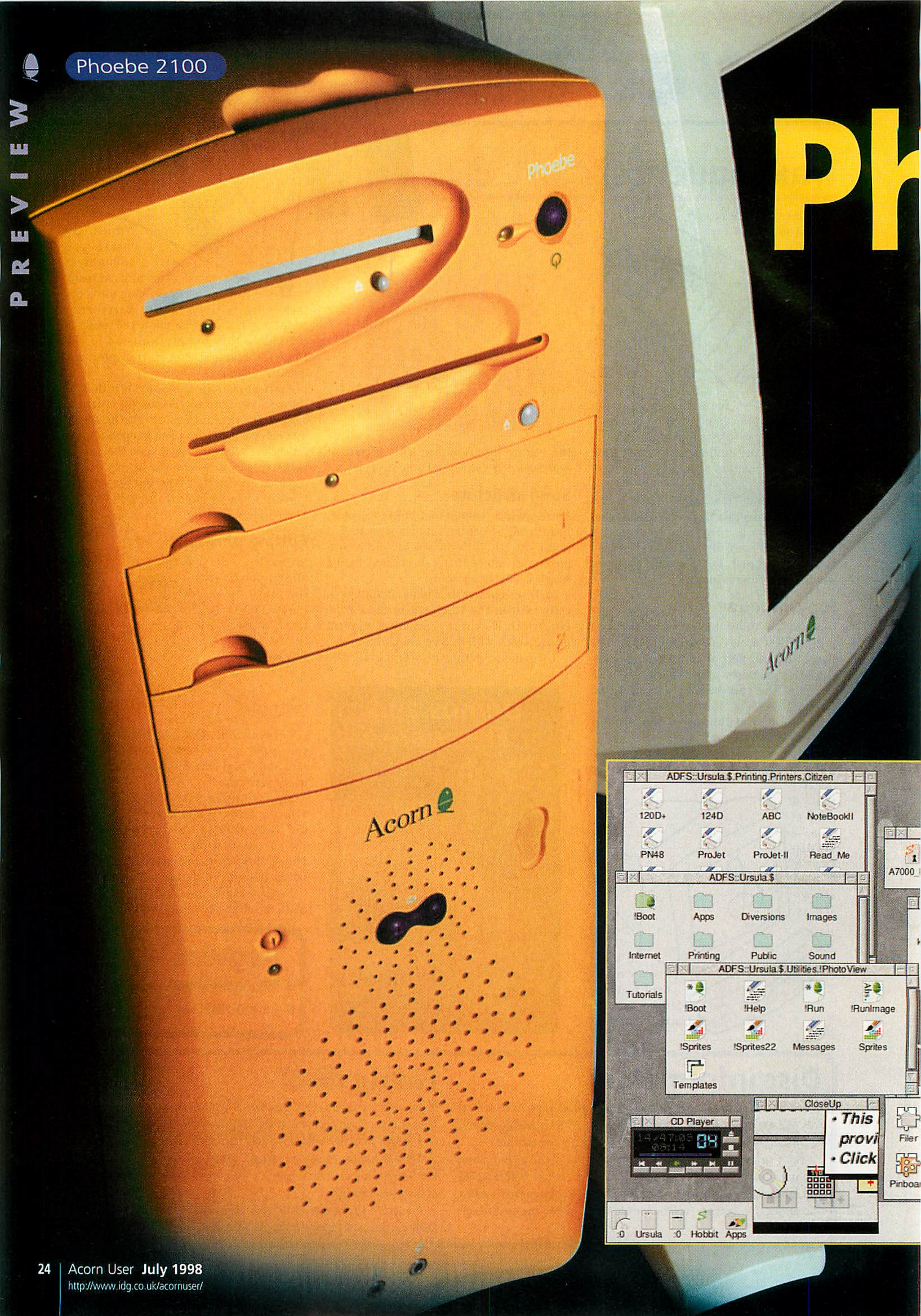
Most software will run straight from the archive, but some programs may need to be copied out of the archive before being run, uncompressing them in the process. Any program that saves a file to disc, for instance, will be unable to do so into the archives on the disc.

Faulty disc?

If your disc is faulty, test whether it will verify by clicking with Menu on the floppy drive icon and choosing Verify.

If it fails to verify or is physically damaged you should return it to *TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH.* If it verifies successfully return it to the *Acorn User* editorial office at the usual address.

The *Acorn User* cover discs have been checked for viruses using *Killer* version 3.001 from Pineapple Software.


Ph
Phoebe
Acorn
ADFS::Ursula.$.Printing.Printers.Citizen
120D+
124D
ABC
NoteBookII
PN48
ProJet
ProJet-II
Read_Me
ADFS::Ursula.$
!Boot
Apps
Diversions
Images
Internet
Printing
Public
Sound
Tutorials
ADFS::Ursula.$.Utilities.!PhotoView
!Boot
!Help
!Run
!RunImage
!Sprites
!Sprites22
Messages
Sprites
Templates
CD Player
CloseUp
Filer
Ursula
Hobbit
Apps

hoebe 2100

The *Acorn User* team decide whether Acorn's new power station is fit for the next century

Manners maketh the man" but for a computer "software maketh the machine" – after all there's not a lot wrong with the *hardware* of a modern PC, it's the operating system and software that gives it such bad manners, unlike our favourite machine. So what about the software on the Phoebe?

Using Phoebe is very similar to using the earlier machines, which is just as it should be. You can see from the screenshot that each window has an extra "iconise" button on the right of the title bar, just click it to reduce the window to an icon on the pinboard.

The pinboard itself has been enhanced to iconise different types of window to different regions of the backdrop – applications to the left, documents to the right. But the behaviour is configurable. This type of operation has been available for lesser machines from PD software.

Configuration has been altered considerably internally though to the user it won't seem that different. Configure itself is now configurable, third-party software and hardware can make their configuration programs part of the main *!Configure* application complete with special puzzle-shaped icons.

This was only a preview, of course, everything is still subject to change – the machine itself wasn't even running as fast as a StrongARM Risc PC because some parts were still prototypes. But if we had to make a decision as to whether Phoebe is a good thing or not – then yes, it is.

Industry standard

At the Wakefield show I was allowed to peer into the open case of Phoebe, after five minutes of solid peering I heard someone say 'he looks interested in that', and after a small amount of laughter I heard another voice say 'he could probably make you one by now', well not quite but as a first look it proved quite interesting.

It's probably fair to say that this computer is one of evolution rather than revolution, as it needs to be to maintain maximum backward compatibility and yet be an improvement on an extremely good Risc PC. This is the first Acorn computer to boast a tower design – that's if you don't count the option of standing the Risc PC on its end.

Needless to say the electronic construction is of the highest quality and there is ample scope for upgrades. To start off there is a single processor slot, so using the Acorn as a PC will have to take another route than Phoebe's predecessor. That route will be via perhaps the single most important improvement, in the way of four PCI slots. Now PCI cards have been around for a few years on both the Macintosh and PC clones. These plug-in cards connect to a standard PCI bus and allow rapid communications between the computer and the card's electronics up to a speed of 132Mb per second.



As these cards are manufactured for a mass market their price can be very competitive. At first it was only used for graphics cards giving support for enlarged monitor size, better colour depth or an extra screen. Also many cards have extra processing power on them and so accelerate graphics performance when say rendering 3D objects in real time or using complex image filters. Currently these cards cost between £70 to £500 depending on the accelerated graphics support.

However it doesn't stop there as there are many other types of PCI cards, for example high quality sound samplers and output devices for making a multi-track digital studio. Then there's video acquisition devices, networking cards and instrumentation like oscilloscopes, spectrum analysers and digital voltmeters. Finally you can also have a complete computer on a card, so you could have a PC and a Mac built into your Acorn. The only snag with this is that someone has to write the software drivers and applications to make use of these cards, but I am sure this will happen, and in a big way.

The speed of operation of the main memory has been boosted to take advantage of the processing power of the StrongARM. It now runs at 64MHz giving an approximate three times speed increase over the Risc PC. Remember this is memory speed, not processor speed – so don't let any ignorant Pentium owner tell you that's slow. To ensure the existing investment of both designers and consumers is safeguarded there are also three podule slots in Phoebe, so traditional Acorn expansion is not threatened.



But there are other improvements, tucked away, almost hidden. The maximum amount of video RAM is doubled to 4Mb, this means that Phoebe will support large high resolution displays at greater colour depth than before. As it stands, with my 17 inch monitor, I can only display a 1024 X 768 screen in 16 bit colour and a 1280 X 1024 screen in 8 bit colour. While I would like to have really seen 8Mb of VRAM allowed, like on some PCI cards, 24 bit colour should be available in resolutions up to ➤

1024 X 1024.

There is also a move towards using the less technical PC-type interfaces, for example there is a PC joystick port with a built-in MIDI interface. This makes it a lot easier to get great sounds out of the computer although this will have to be out of external speakers. It has to be said that what looks like a large speaker grill in the front of Phoebe is just for show, or ventilation. The internal speaker itself is quite tiny, about one inch, and is mounted about five inches away from the grill pointing at right angles to it. Most users wanting serious sound usually have a pair of large external speakers anyway. There is also a built-in hardware codec to get better sound support from standard audio compression systems like that used to stream audio from the Internet.

Finally, tucked away in the spec and perhaps unnoticed by many, is an IrDA interface. This stands for Infrared Data Association and allows data transfer using infrared beams. As this is an international standard that many peripherals, laptop and palm top computers already use, there's an upgrade to the Psion that uses this. This interface can work at a number of different speeds, the speed used is negotiated between the sender and receiver to ensure maximum data transfer rates.



These rates are fast as well, ranging from 2.4 Kb/s to 4 Mb/s with the standard being 9.6 Kb/s. That is bits per second not bytes so you have to divide these numbers by 10 to get the transfer rate in characters per second. You will see that the top speeds are quite fast. As an added bonus there is an extra serial port so you don't have to keep unplugging your modem.

In a strange way Phoebe is to the Risc PC what the Master was to the Model B, all the upgrades you could make to the B and then some more. The addition of PCI card support will ensure that Acorn's enormous processing power can be connected to industry standard hardware, and I don't mean PCs but true industry standards.

Mike Cook

> If you want to get the technical low-down on the PCI bus try the book:
>
> *PCI Systems Architecture by Shanley & Anderson, Addison-Wesley ISBN 0-201-40993-3*
>
> It's a bit boring and there's no plot, but all the information with applications is there.

Communicate!

If the future is bright yellow for the Phoebe 2100 it will be tinged with infra-red at the edges, for this is the first Acorn machine with an IrDA communications port. Located in the front panel of the prototype machines shown at Wakefield is a keyhole-shaped translucent moulding that will contain the Infra-red transducers.

This will please Psion 3c and Series 5 owners who have invested in one of the recent Psion-to-Acorn backup applications that will doubtless be re-engineered for Phoebe. Other Ir-capable devices such as printers, keyboards and mice could also be supported.

Phoebe's communication ports are all provided by combo chips as in the Risc PC and the list includes two standard serial ports, PS2 ports for keyboard and mouse, a bi-directional parallel port, joystick, midi and audio inputs and headphone outputs for a full SoundBlaster-type 16-bit sampling system.

Phoebe could become a favourite machine for the mixing and sampling fraternity if Acorn also provided TOS-link 3.5mm digital audio optical interfaces. These are the connectors fitted to Sony MiniDisc recorders and look like a stereo audio jack, which they are, but contain a simple optical transducer as well. They use simple LEDs, photo detectors and cheap plastic fibre cables to provide bandwidths up to 3MHz, more than enough for digital audio.

Phoebe's two standard RS232 serial ports are expected to be capable of 203,400 bps or faster, but when the IrDA port is in use only one will be available for use with external devices. Although most PC internal modem cards are currently ISA bus format, Phoebe's PCI card slots will allow installation of almost any comms interface, such as Ethernet, ISDN terminal adaptors and cable modems when they become available.

David Dade

Newsworthy

The arrival of Acorn's new Phoebe 2100 has been much-welcomed and anticipated. Acorn has been previewing its basic features for around a year and there has been much less of the secrecy which surrounded Phoebe's ancestors before they were launched. This is partly because much of the technology inside Phoebe represents enhancements of innovations originally introduced with the Risc PC four years ago.

The Risc PC was a radical addition to the Acorn family — it introduced the once-dreaded concept of PC-compatibility, plus an easy to upgrade modular design. Phoebe is even more reliant on 'industry standard' features, like the NLX tower case and PCI bus expansion card slots, however, the essence of Acorn's individuality remains undiluted.

Phoebe's RISC OS 4 is a much-enhanced version of the familiar Acorn operating system, you can still fit podule cards, there's a StrongARM inside, there's hardware support for multiple processors and of course Acorn guaranteed that Phoebe would not blend into the background with its striking yellow front panel and designer look, courtesy of Fitch — the industrial design consultancy responsible for such icons as the Iomega Zip drive.

Phoebe 2100 will become Acorn's standard bearer. Although Acorn are trying their best to establish themselves in new markets like digital TV and other consultancy ventures, Phoebe will be a primary example to Acorn's clients of what Acorn are capable of achieving. It will also be an important resource within Acorn to develop and run software destined for products being designed for consultancy customers. Of course, some of those customer developments could see their way back to Phoebe owners — software MPEG2 for watching crystal clear video on screen, for example.

Acorn have long since distanced themselves from their education market traditions — that's all down to Xemplar these days. But as the Risc PC's eventual replacement, Phoebe will inevitably be promoted as an education computer at the top of Xemplar's range. Schools across the country will soon feature a certain amount of mustard yellow décor in their classrooms. Phoebe is also just what Acorn enthusiasts, both personal and commercial, have been waiting for. Phoebe is faster, more capable of benefiting from off the shelf peripherals. It's not difficult to predict that Clan members and other enthusiasts will be adopting Phoebe with enthusiasm. It will also give a boost to companies like Eidos, who need every ounce of computing horse power to develop their amazing Acorn-based Optima professional off-line video editing product.

To summarise, Phoebe builds on the Risc PC's main strengths while retaining Acorn's individuality. It's a tribute to Acorn, considering the size that Acorn is these days, that Phoebe was possible at all.

Ian Burley

The mystery behind the strange peanut adverts which appeared in the April and May issues of *Acorn User* was finally cracked open (if you'll excuse the pun) at this year's Wakefield Spring Show. Innovative Media Solutions (IMS) have teamed up with Acorn Computers and Interconnex UK Ltd to develop a fully featured RISC OS portable.

The Peanut is the first RISC OS portable computer ever to be produced by someone other than Acorn Computers and will fill a small but highly noticeable gap in the current Acorn line-up. The machine that was demonstrated at the Wakefield show was a prototype of the final product and was given pride of place on IMS's stand, perched on a Roman looking pedestal decorated with pictures of peanuts.

The outer shell

The case, which uses an existing PC design, has a footprint a little bigger than that of an A4 sheet of paper (297x236mm). This makes it slightly larger than that of the old A4, but the machine appears smaller as the case is much thinner (only 47mm). The machine on show was finished in a dark grey and looked as sleek and stylish as any PC laptop.

The keyboard is the now standard Windows 95 version, complete with Bill Gates' wonderful start and menu keys which IMS will probably utilise to perform relevant RISC OS functions.

The mouse is a two button glidepoint system. This is effectively a small touch sensitive pad. The user moves their finger around and the pointer follows suit. Emulating a three button mouse onto a two button system can be done in a number of ways and IMS will probably make it configurable so that the user can choose the system they prefer. Suggestions made at Wakefield were to use the Windows 95 menu key or to duplicate the missing mouse function (configurable to be either Adjust or Menu) by pressing both buttons simultaneously.

The Peanut has an excellent 12.1 inch colour TFT screen, which is capable of displaying resolutions of up to 800 x 600 in 256 colours. The display is sharp and bright, making it easy to read and, unlike some screens, doesn't get left behind if the user moves the mouse very quickly or is performing tasks which require a fast refresh rate, such as playing Replay files.

The machine is fitted with a 2Gb hard drive, a 2Mb floppy drive and also an internal 20-speed CD-ROM. Unlike some PC portables, the CD and floppy drives are fitted into separate bays and are not interchangeable devices.

Cracking open the nut

The heart of the Peanut is the ARM7500FE processor, mounted on a specially designed motherboard, which nips along at a respectable 48MHz. The machine will be supplied with 16Mb of EDO RAM as standard, expandable to 32Mb. The combination of the EDO RAM and the floating point accelerator means the machine should have a performance comparable to that of a Risc PC 700 with VRAM.

The operating system fitted to the machine is RISC OS 3.71 which is the latest (non-Phoebe) release. Although the OS has support for PCMCIA cards there is no port on the Peanut. This is due mainly, to the complexities of getting the system to work reliably.

Ports on the rear of the machine allow the user to plug in an external keyboard, monitor and mouse as well as providing the standard serial and parallel functions.

The rechargeable battery supplied with the Peanut will be a NiMH (Nickel Metal-Hydride) which should give the average user a lifetime of around four hours.

The specification, look and feel of the machine is just superb and IMS and all those involved should be congratulated for taking the plunge, accepting the risks and developing the Peanut.

The machine is not quite finished yet and some of the specifications mentioned above may change slightly. IMS are determined not to release the machine until it's ready and so when it does go on sale, hopefully at this year's Acorn World, you can be sure you are buying a thoroughly tested and finished product.

And finally...

The reasoning behind the strange peanut adverts was to make visitors to the show wander around and discover for themselves who was developing the new portable.

Unfortunately, much to IMS's annoyance, the fact that they were responsible for the Peanut was leaked out approximately 24 hours before the show started. The result of this was a stampede of people heading straight for IMS's stand with their credit cards in hand to try and reserve one – ruining the surprise factor but proving once and for all that Acorn users are crying out for a decent portable.

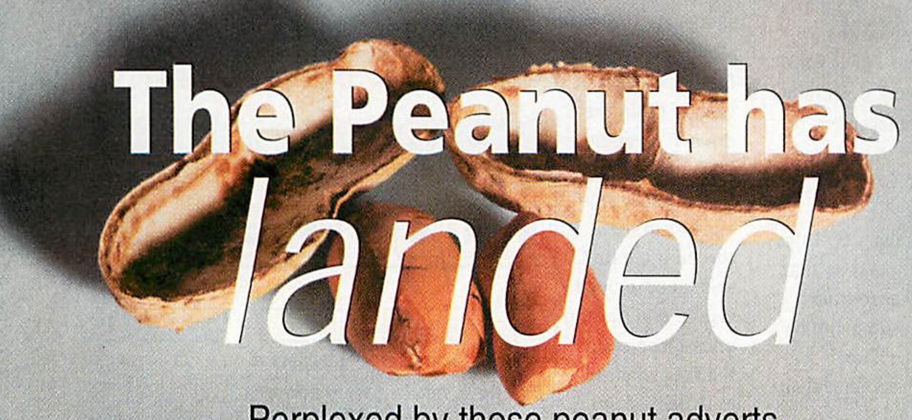
Before you do the same, IMS have taken the sensible decision of not accepting any money until the machine goes into production.

Oh, I forgot to mention the probable price of this superb machine – less than £1500 ex VAT – excellent value for money or what?

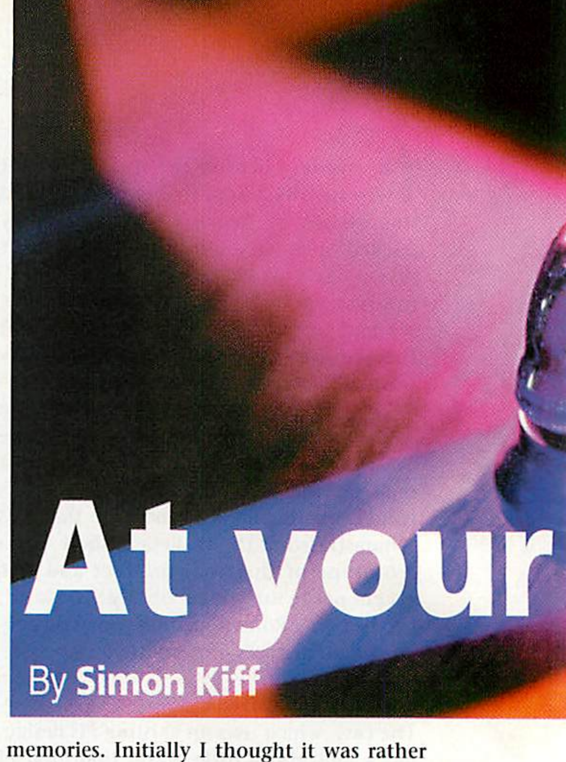
Please note that this preview is based entirely on my initial impressions of the machine and a quick demonstration on the IMS stand. A full hands-on review will follow just as soon as the machine goes into production.

Contact details

Innovative Media Solutions
Address: Box Bush Farm, West Wick, Weston-Super-Mare, BS24 7TF
Tel: 01934-552880
Fax: 01934-522881
E-mail: sales@ims-bristol.co.uk



Perplexed by those peanut adverts
– **Mark Taylor** explains it all



The RISC OS desktop is an extremely important part of the operating system and is what attracted most of us to Acorn computers in the first place. The great advantage of RISC OS has always been that individual programmers can write software to improve the operating system. Some work at a fairly low level, others improve the look and feel and some are simply useful programs which make using RISC OS quicker than it already is.

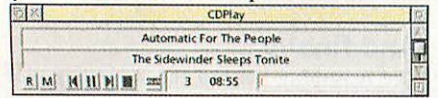
In this series of articles I am going to be reviewing some of the software which you can use to improve your productivity under RISC OS. These are programs which people keep in their boot sequences and use every day. The sort of programs you cannot do without – probably.

CD players

The CD-ROM drive is now standard issue for most Acorn users, but the software provided by Acorn is minimal and, to be brutally honest, ugly. The following programs were written to solve that very problem, with varying degrees of success.

CDPlay – Leo White

This was the first piece of software I looked at was *CDPlay*. It does not install an icon on the iconbar, but instead forces a click on your CD-ROM icon to open its main window, which is basic but allows all the normal functions to be carried out. Expanded, it also lets you enter the tracks names and to name the CD. This is then remembered when you next put the CD in so that you can select tracks by name rather than just number.



Simple controls, but unfortunately track memory seemed to be temporary

However, I could not persuade *CDPlay* to actually remember any of my CDs! Clicking Save after entering the tracks caused the information to be recorded in a file within the program, but if the CD was ejected and reloaded the track names vanished.

I even tried merging in my catalogue from *SmartCD+*, which again added the information to the listings file, but the program refused to identify my CDs. This rather major glitch aside, the program and memory functions work rather well and the program is an improvement over Acorn's offerings.

SmartCD+ – Alt-itude

SmartCD+ is a commercial offering which I have been using for several years as it was one of the first to offer track names and memories. Initially I thought it was rather stylish. How my opinion has changed. The non-standard dark grey window looks so out of place in RISC OS and the buttons are small and irritating.



SmartCD+ looks a little out of place in RISC OS

That said, it does have some very useful features. Firstly (and this is very important), it is stable. That is not to say that the other software here is not – I had few problems while I was using the other programs, but I have not seen *SmartCD* crash once in the several years I have been using it.

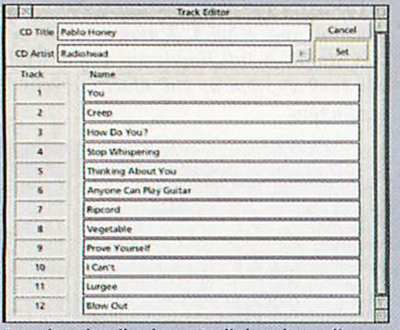
It offers track name memories and will even add the track length to all the names. It has a powerful programming facility which will save the program for a given CD so you always play your favourites every time you put the CD in. This will also perform functions for fitting tracks to tapes



CDViewer's main control window

CDViewer – Jeremy Poulter

This program was a little more complicated, but turned out to be my favourite from those here. Like *CDPlay*, it doesn't intrude on the iconbar and opens from your CD icon. It actually forms a replacement for CDFSfiler and will deal with more than just audio CDs.

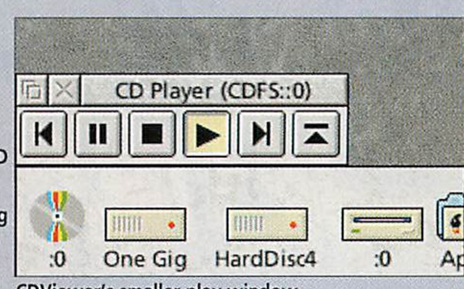


Entering details about Radiohead's earliest offering

It remembers CD titles and track names so that you can choose tracks from a pop-up menu by name rather than number. Another clever feature is that the track list lets you choose 'various' as the author and then provides an author section for each track so that you can easily index your compilation or mix CDs.

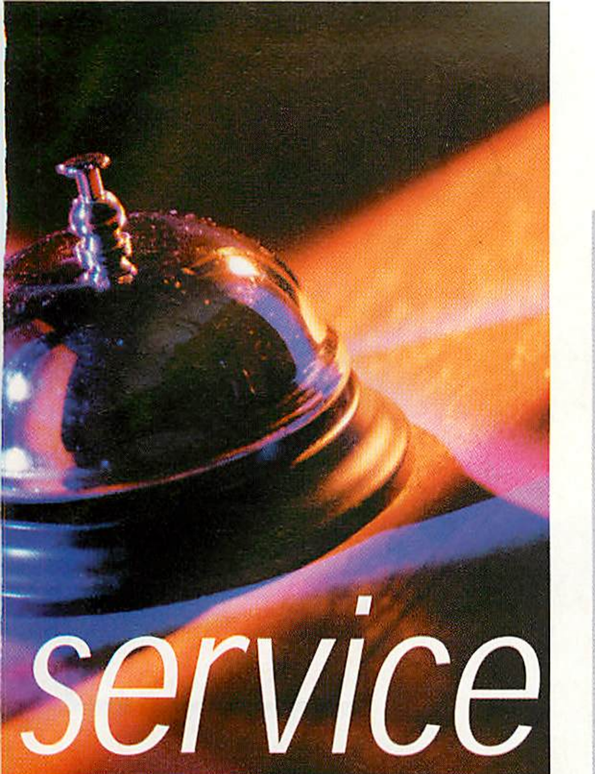
The icons *CDViewer* uses are slick and probably the best designed here. It also has two sizes of window. The small one is unobtrusive and sits in the corner above your iconbar, giving you access to simple control buttons including play, stop and track skip. The larger window shows more detail about the CD playing (including the track name and position with a moving 'progress' bar). This larger window also allows you to start a track playing at any point by dragging the slider bar to the required position.

As I mentioned, it replaces CDFSfiler, so installs itself in your Boot sequence. This means you cannot use *CDPlay*, but it seemed to work alongside the other software without any problem. One clever feature is that the software changed the CD icon according to the type of CD in the drive. If an audio CD is playing, a flashing play sign appears in the corner. If a data CD is in, another icon is used and clicking on the icon opens the filer window as usual.



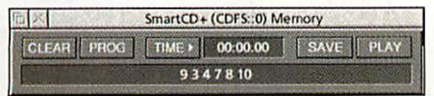
CDViewer's smaller play window





and, cleverly, will create a *Draw* text area containing the track names which can then be positioned and formatted on a tape inlay card in *Draw*.

Altitude have thoughtfully provided a template, so creating a tape box is simply a case of opening the template, dropping on the track listing (or the program listing) and printing it. If only it could copy the tracks to tape for you too.

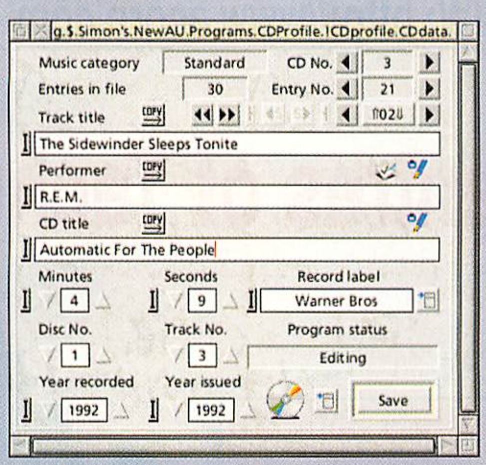


Programming SmartCD+

CD Profile – Malcolm Knight

It seems a little unfair to compare this program, or more accurately suite of software, to the others here. It really is for the serious CD collector or, as the author himself puts it, "It is ... aimed at a totally different 'audience' from any other player, providing as it does the play and extensive database facilities required for serious use such as music appreciation societies and broadcasting."

The main program in the suite is *CD Profile* itself. This is technically a CD cataloguing tool. You do not need a CD-ROM to use it and it will take details about the title, author, track names, year of writing, year of publishing and even record label! That said, if you do have a CD drive, then when entering a new CD you can select 'Read CD' which will set up the appropriate length and number of tracks automatically. It will also register a time code for the CD so that each time it is put in the software will recognise it and the player section of the software will let you know what track you are playing.



A really comprehensive catalogue program, if a little daunting

There is even a facility for storing information about particular tracks, such as the individual authors and other comments. The playing section of the program has a comprehensive programming facility, shows you the previous and next tracks in a scrolling window and (as all the software here does) lets you show the time format in a number of different ways.

Be warned that when you first use the program it may seem a little daunting. There are some large menu structures, huge windows literally full of buttons and although there is comprehensive Interactive help, they will all take a bit of getting used to. Persevere and you won't be disappointed. I did encounter a few minor bugs (nothing which caused the software to crash), and it took me a while to work out that you had to create a category before you could start adding CD data, although this kind of problem tends to result in my desire to use software without even taking a quick thumb through the help files!

DigitalCD – A. Timmermans

Digital CD looks a bit different to the other programs here. It is a floating window but doesn't have any of the normal RISC OS tools, except for the close icon, floating



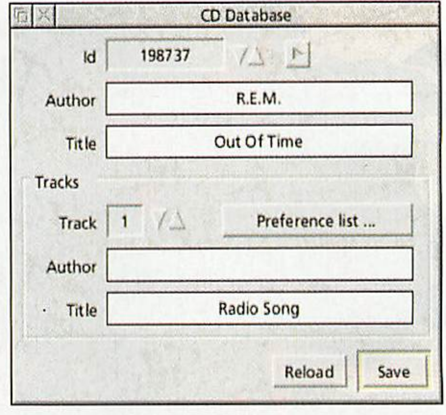
A bit non-standard, but well designed nonetheless

inside the top left corner. To move the window, you grab the large section at the top and just drag it around.

As with most of the other programs here, the software lets you record CD and track names and they are displayed at the top of the window. At the bottom of the main window are all the standard controls; play, track skip and track wind.

There are also a number of other controls; shuffle, repeat (track or CD) and program. For each CD there is a preference list which actually lets you change the order in which you want the tracks played. As usual, clicking on the time display cycles through a number of different options such as elapsed time and remaining time, for both the current track and the whole CD.

One minor glitch I did find was that sometimes selecting a track from the small track window started the next track playing. A quick click on 'back' sorts this out, but it could prove annoying.



Entering details in DigitalCD

The CD player isn't the only part of the program however. Using a very similar window, it will play a number of different music file formats, including Digital Symphony and PC MODs. It happily handled all the files I threw at it and seemed unfazed by playing a CD and a music file simultaneously.

Conclusion

CD wise I'll be sticking with *CDViewer*, because it does a really competent job with no glitches. If there wasn't the problem with the track selection with *DigitalCD* then I would probably use that, but *CDViewer* does have other benefits, like the smaller play window for example.

Next month I'll be looking at desktop enhancers.

Product details

Product: CDPlay
Source: http://www.ukc.ac.uk/php/lptw1
Product: CDViewer
Source: http://www.brunel.ac.uk/~cs97jjp3/Software.html
Product: SmartCD+
Source: Alt-itude software
Product: CD Profile
Source: http://www.digidark.demon.co.uk/CDProfile.html
Product: Digital CD
Source: http://www.geocities.com/SiliconValley/Horizon/4471

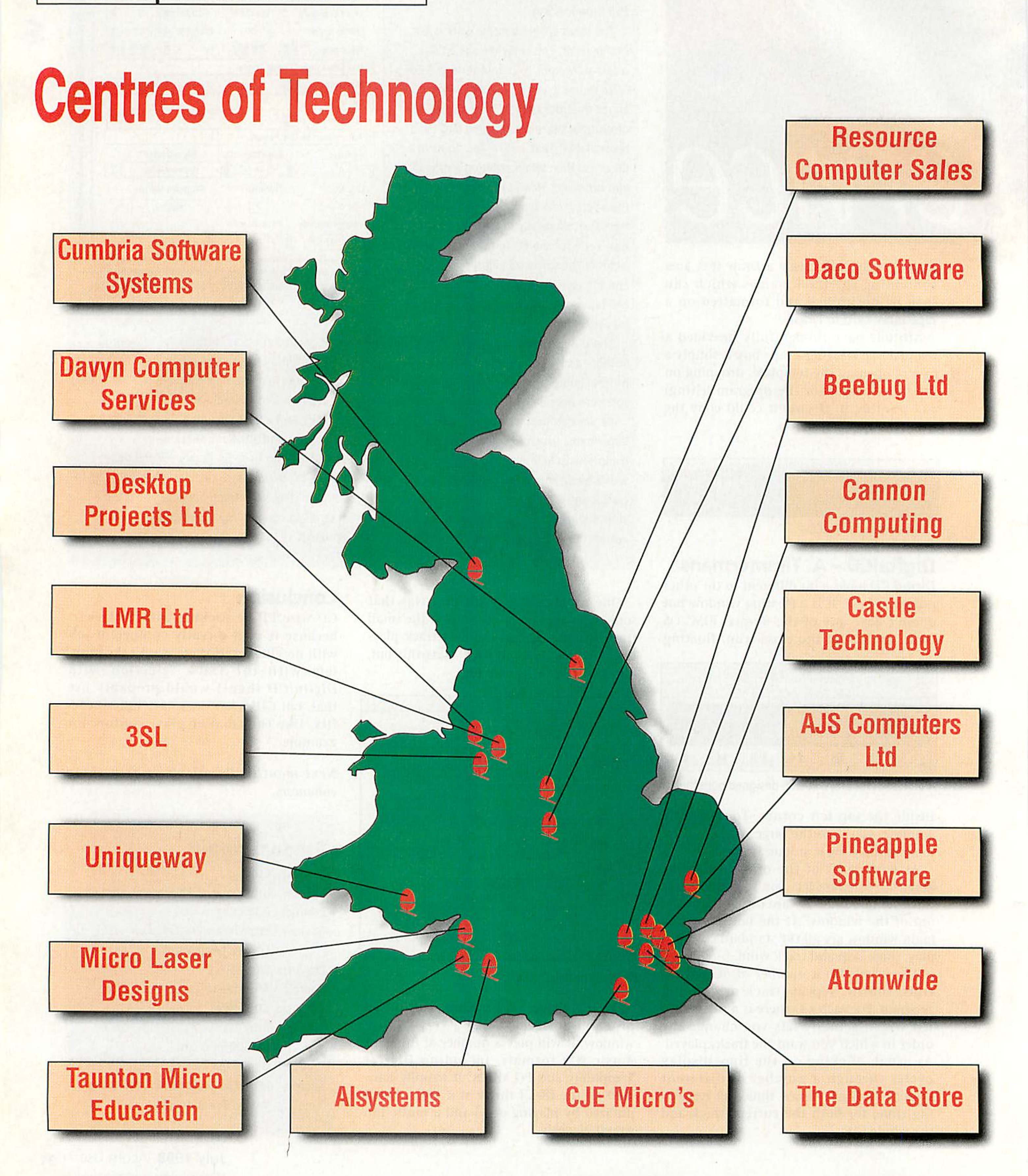
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Design studio in your Acorn –part 1

Express yourself with HyperStudio, as **Stephen Scott** discovers...

I have known about *HyperStudio*, long before using it to prepare the third *Acorn User* CD-ROM, through demonstrations given to me by university lecturers. It has an impressive pedigree in its native America, having been under constant development on the Macintosh and PC computers since 1988 by Roger Wagner Publishing. In its 10 years, *HyperStudio* is now used by over two million people world-wide.

For the uninitiated, *HyperStudio* allows you to create multimedia. You can integrate text, graphics, animation, sound, music and video together to form eye-catching, head-turning interactive digital media. *HyperStudio* achieves this through the method of stacks (the electronic equivalent of pages in a book). Each card in a stack is shown in an arbitrary order, according to the actions of the user when they interact with it. In comparison, packages such as *Macromedia Director* adopt a time frame based approach – a far more complex method than *HyperStudio*.

Some years ago, TAG Developments were appointed as UK distributors, so it was natural that the prospect of an Acorn version should be in the making. It was first released around 1993, along with a barrel-load of bugs. Since the package was last reviewed in the March 1996 issue, development has been relatively constant. This review will be looking at version 3.01 and in the process will inevitably make fleeting references to the versions available on the other platforms. It should be noted that the Acorn version is subtlety different in its operation and I will touch on this later.

HyperStudio – for now at least – is the only commercial multimedia authoring program on the Acorn platform with Mac and PC versions. From the outset, it is aimed firmly at people who want to express themselves quickly and easily. Mac and PC versions are Internet capable, whereby special plug-ins are included for installation into Web browsers, so that stacks can be embedded into Web pages and viewed successfully. TAG have stated that a suitable plug-in for RISC OS (and therefore NC OS) Web browsers is being developed for a later release.

All versions come in a rather large glossy box containing a CD-ROM, a couple of floppy discs, two ring bound manuals and extra documents covering the software installation. One manual explains *HyperStudio*, while the other talks you through the use of the built-in Hyperlogo language. For each manual, one end is dedicated to reference and the other to tutorials. By turning the manual upside down and the other way round, you can consult the other end. The pages are printed in black and white, but copiously illustrated with screenshots and it's generally well laid-out and written.

Installation

Installation can be full or partial. A partial installation covers the main program, the stack player and a small set of tutorial files. First time users are recommended to perform a full installation (which consumes about 20Mb of hard disc space). Apart from the software and stack player, a set of stacks which introduce *HyperStudio* and how to use it, some useful multimedia resources, and links to further resources on the CD-ROM are installed.

Acorn stacks prior to version 3.01 were saved as standard Acorn applications, whereas the Mac and PC save their stacks as single files. This has now been rectified and is a welcome enhancement as it bypasses the 77 file limit which would have restricted the creation of larger single stacks. You can also rename the file without losing the icon.

The main program can be configured to suit two groups of users – beginners and professionals. By default, *HyperStudio* caters towards the former, where a simple click of the Select button will open up a new stack window for you on the desktop, ready for your input. Beginners will also be introduced to Addy the dog, who pops up occasionally to help you while the program is running – advising or explaining your actions and what effect they could have. This is very useful and is written in short, clear English so that younger users can understand it without frustration. Despite ➤



➤ this, the lack of interactive help is a glaring omission.

Experienced users can remove Addy and therefore customise the program using the preferences dialogue on the iconbar menu. A tutorial is provided within which you are introduced to some of the main principles of *HyperStudio* and it is explained clearly and concisely.

Stacks of info

Stacks can now consist of as many cards as you like, in comparison to earlier versions which imposed a limit of around 70 per stack. However, the bigger the stack, the more memory is consumed. Separate stacks can, however, be linked together for larger projects.

Along with the main stack window, a video style playback pane will appear below and a toolbar alongside it, containing icons representing standard drawing tools, much like the ones used in *!Paint* and *!Draw*. There are, however, a few exceptions which require further explanation.

At the top of the toolbar are two large icons, one a hand, the other a pointer. These icons determine whether you are in browse or edit mode. In browse mode you can test your stack as it will appear to other users. In the preferences dialogue you can choose your stack to be viewed in a special presentation mode, which places your stack on a single coloured background to remove distraction and add a professional feel to your work, especially when you are doing a presentation in front of an audience, for example.

Edit mode, meanwhile, allows you to make use of the other tools in the toolbar which behave similar to those in *!Paint* and *!Draw*. A pipette tool selects the current colour under your mouse pointer and three selection tools allow you to drag out selection boxes in rectangular, circular or irregular shapes.

Some, or all, of these tools can be adjusted or altered by using dialogue boxes accessible either by double-clicking, or Adjust-clicking the desired icon (the former method is for the benefit of non-Acorn users, to make them feel at home) or by selection from the program menu. *HyperStudio* uses two layers for each card in a stack – a background and a foreground. The background can be used to draw pictures using the toolbar or for imported graphics from a bitmap drawing package. Drawfiles imported to the background are converted to bitmaps to enable the painting tools to be used on them. ➤

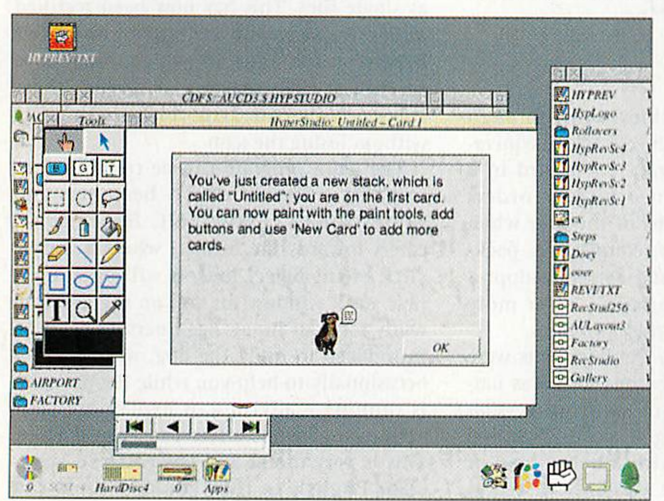
HyperLogo

HyperLogo is HyperStudio's script language, used for adding further interactivity to your stacks. It is based on the Logo language and therefore supports turtle graphics. The supplied manual recommends several Logo publications to further aid you, but the reference and tutorial manual is perfectly adequate in its own right. The language is, with very few exceptions, platform independent so scripts do not have to be altered to run on another machine successfully.

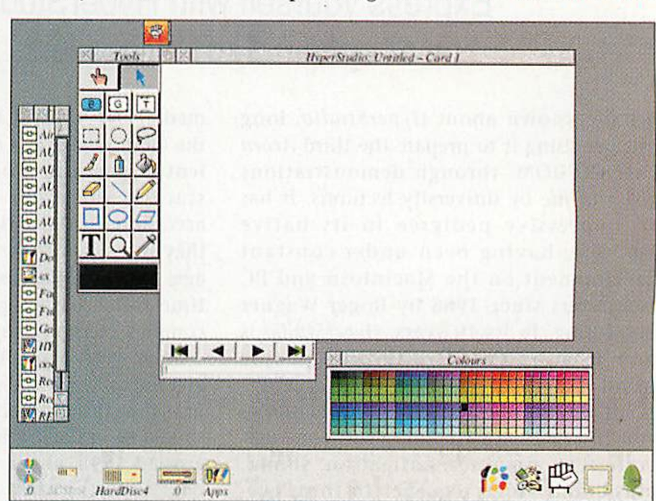
Scripts can be attached anywhere within your stack and can be activated in many ways, such as upon pressing a button or when a time limit was been reached. Therefore, scripts can be tied to buttons, sounds, movies and other items. You can even define menus or alert boxes with HyperLogo. This broadens the scope for producing fully interactive multimedia projects.

HyperStudio also checks the reliability of your programming and will warn you accordingly if there are potential problems. Procedures and variables are supported, so that conditional scripting can be made. The HyperStudio CD-ROM contains HyperLogo resource files referred to by the tutorials, so the learning curve has been made as easy to climb as possible.

Because the HyperLogo structure is so similar to languages such as Macromedia Director's Lingo, HyperStudio provides a good, affordable starting point to learn such programming techniques required for large commercial products created with Director.



First time users are regularly greeted by the HyperStudio mascot, Addy



The HyperStudio main window, and accompanying toolbars

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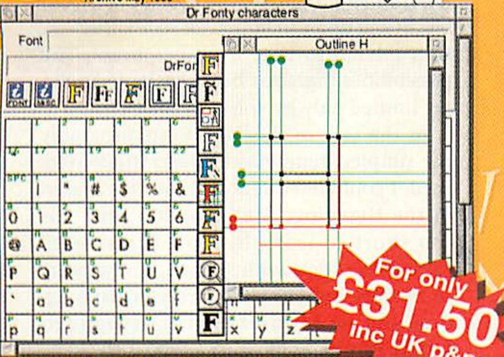


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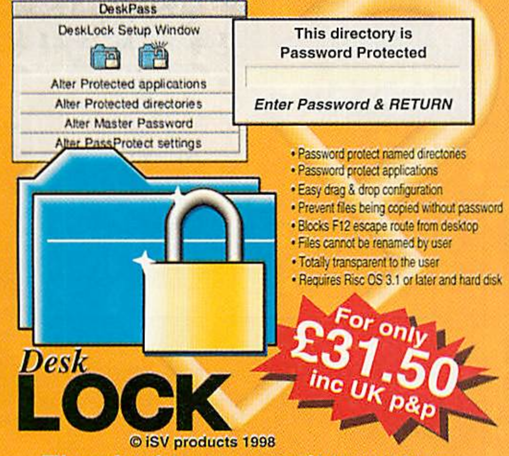
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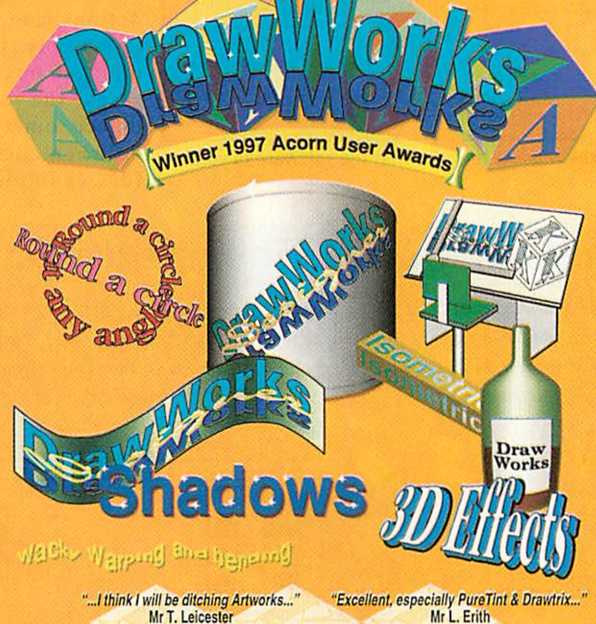
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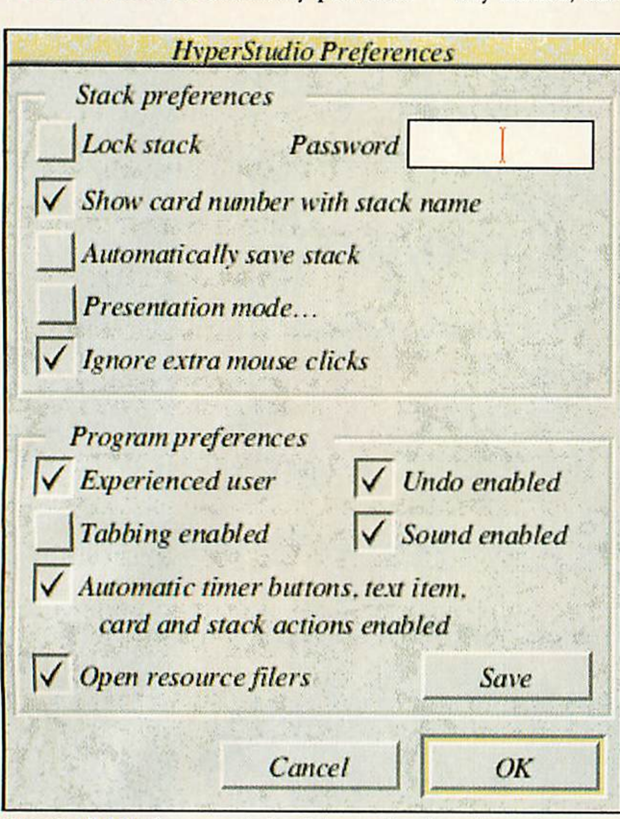
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➤ *ArtWorks* files cannot be loaded directly into the background, apparently a limitation in *ArtWorks* itself, so export to Drawfile format is advised.

An undo option is provided but is single level only, so if you make more than one mistake, only the previous one can be reset. Saving regularly is important and an autosave feature is thankfully provided.



HyperStudio's Preferences window lets you alter the software to your needs

The foreground is used to place objects – text, graphics and buttons. Objects can be selected and moved around, copied and pasted in edit mode and also have interaction attached to them.

Text can be made scrollable or non-scrollable within windows, made read-only or editable. Text styles can also be applied in any fashion, but a word of warning based on my experience of the AUCD: Be sure the background colour of your text is set correctly to the background colour of your stack, otherwise you will get rather nasty readability.

If you have RISC OS 3.7 or later, background blending will be present, negating the need for choosing background colours. It is good to know though, out of consideration to other users who may view your stacks on older machines.

Interaction is provided by the Action dialogue box, reached by clicking the Actions icon present in most object editing dialogue boxes. This gives the selected object something to do when clicked on, for example. The actual objects can be a proper button, whose borders can be selected from the predefined list or it can be a 'hot spot' sitting on top of a graphic or a line of text. You can tell the button to advance to the next card, play a sound or movie or activate some HyperLogo script commands.

When you begin to define an action, *HyperStudio* guides you through to its completion to prevent partially defined links being created. Of course you can cancel at any time, in order to start over. The mouse pointer will occasionally change to a no entry pointer meaning that you cannot do anything further until an action has been completed, when it will turn into a tick, allowing you back to normal edit mode.

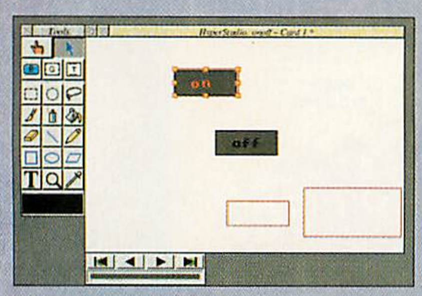
It should not be forgotten that actions can be applied to any form of media in *HyperStudio*. It can even be applied to a specific word within a text object, opening up the possibility of hypertext, where underlined or highlighted words or phrases can be clicked upon to jump you to another section related to that word or phrase. The possibilities that are offered by HyperStudio are limited only by your imagination.

In the case of the AUCD interface, only the simplest functions of *HyperStudio* were used. I could have ventured into the realms of the Hyperlogo language, but time was too short to learn it. From my limited experimentation with it though it appears to be very easy to use, once you have figured out its form of syntax. Hyperlogo scripts can be applied to a whole stack, or one button. The Hyperlogo manual contains detailed tutorials and a reference guide for each command in the Hyperlogo language. (See box which explains how I produced a simple rollover button using

Creating rollover buttons in HyperStudio

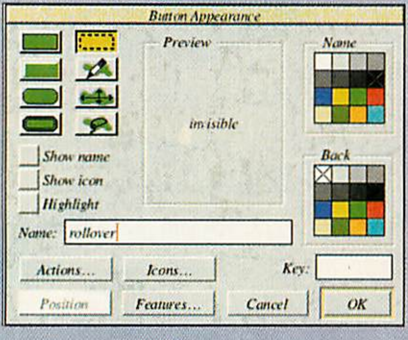
Rollover buttons are an excellent way of conveying user actions on screen. When a mouse pointer is moved over an icon, it will highlight and then return to normal when the mouse pointer is moved away again. The following example shows how to do this using the HyperLogo script language. It is not elegant, but it works.

Step 1



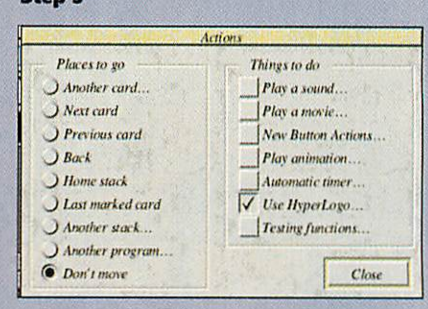
I have created two sprites, 'On' and 'Off'; the 'On' sprite will appear over the 'Off' sprite when the mouse pointer is moved over it on the stack window. The 'Off' graphic is imported as clip art, and positioned permanently on the background; it cannot be moved. The 'On' graphic is imported as a graphic object, so that my Logo script can display it when the mouse rolls over the object.

Step 2



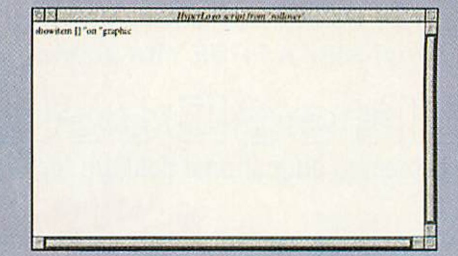
The 'On' object is positioned exactly over the 'Off' graphic. The stack is then saved. Now we will create the first of two invisible buttons. Select the invisible icon, at the top of the second column of button types, and give the button a name. This is good practice when doing a lot of Logo scripting.

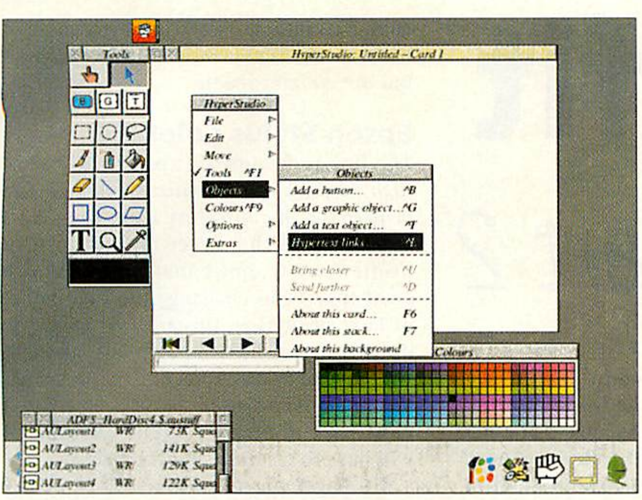
Step 3



Click on Actions and the Actions dialogue box will appear. Tick the 'Use HyperLogo' checkbox.

Step 4




The Objects submenu allows for creation of various objects such as buttons

scripting.) Returning to the subject of the AUCD, I used the built in OLE (Object Linking and Embedding) facility of *HyperStudio* to edit graphics and text, whereby double-clicking on an object or background image with the Ctrl key held down will load it automatically into a relevant package for you to edit 'on the fly'.

Upon finishing, simply save the file (without changing the filename, its important to the OLE process of *HyperStudio*) and it will be immediately applied to your stack, automatically updating it accordingly.

This feature is indeed extremely powerful and is not nearly so easy to do on the other platforms. In this instance, the Acorn version is far superior.

Sound, video and animation

Having discussed the text, graphic and action facilities of *HyperStudio*, it is time to mention the extra dimensions of audio visual capability that can be added to your work.

Replay sounds/movies and voice modules are played automatically by RISC OS, while WAVEForm and Armadeus files are played by a special internal module capable of playing up to 32 such sounds at once, processor speed permitting!

Sound and video files can be dragged or applied to actions or, if you have the appropriate hardware, recorded 'live' either within *HyperStudio* itself or by using accompanying hardware/software, such as Computer Concepts Eagle Mk II digitiser. If you have *MovieFS*, even foreign movie formats can be supported. See the box which explains how to create a piece of multimedia complete with images, buttons and movies.

Version 3.01 also supports animation, but only simple cell-based animation based on spritefiles containing the frames, each sprite being numbered sequentially, so that the program can figure out how to animate your graphic. A future release will support path-based animation as well, allowing a sequence of animation cells to be moved along a predefined path. AU

More next month.

Product details

Product: HyperStudio

Prices: £99.95 (Single educational user), £299.95 (five user educational site licence, then £37.00 for additional extensions), £149.95 (Single user), £449.95 (five user site licence)

Supplier: TAG Developments Ltd

Address: 25 Pelham Road, Gravesend, Kent, DA11 0HU

Tel: 0800 591262 (Freephone orders only), 01474 357350 (Sales and enquiries)

E-mail: sales@tagdev.co.uk

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Other information

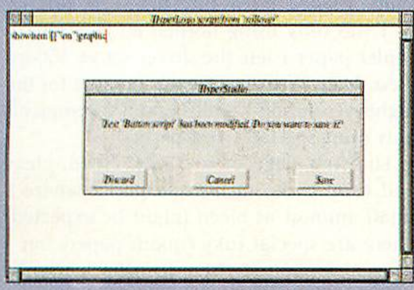
Main HyperStudio website: http://www.hyperstudio.com

Acorn HyperStudio website: http://www.arachnesoft.demon.co.uk/hs

My websites: http://www.geocities.com/SiliconValley/Pines/2760 and http://www.fortunecity.com/lavendar/clint/40

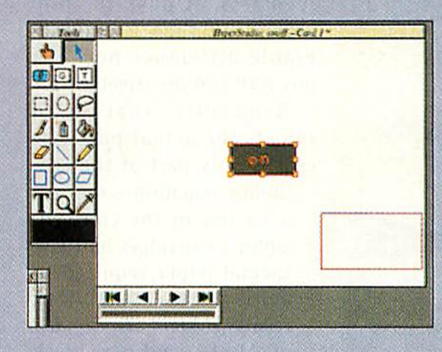
The HyperLogo scripting window will now appear, complete with caret, ready for you to enter your button script. The command SHOWITEM is used to reveal a selected item. The syntax is SHOWITEM card, name, type. For now, we can use '[]' for 'card' as this represents the current card. Our 'On' button is called 'on', so this is placed next. The last parameter tells Logo what the object type is. In this case, it is a graphic. So our complete command is 'SHOWITEM [] "on "graphic. Only one speech mark is required for each parameter in Logo commands.

Step 5



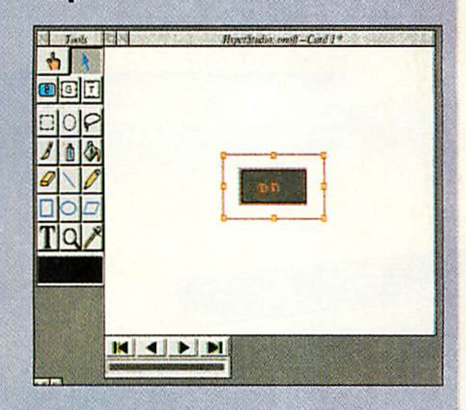
Upon closing the Scripting window, we must save the script by clicking the Save icon in the window now onscreen. We can then close the Actions dialogue, and click OK on the Buttons dialogue to complete the process for one button.

Step 6



The first invisible button is positioned over the graphic. Now to create the second invisible button. This is done in exactly the same way as the first, with two exceptions. This button is bigger and has a line of script; HIDEITEM [] "on "graphic.

Step 7



Position the larger button over the graphic. This invisible button will make the 'On' graphic disappear when the mouse pointer leaves the graphic. This explains why it has to be bigger, so that the command can be obeyed. Save the stack, select Browse mode and move the pointer over the button, and there you have it – a rollover button.

All that's fit to print *–part 2*

Mike Tomkinson presents the next instalment in our series to help you choose a printer, in particular for use in the SOHO

Welcome to the second part of our series that trawls the world of printers. This month I intend to look at another selection of inkjets and a laser printer, each with its own unique features and/or selling points.

As you will remember, inkjets are invariably colour capable these days and most are very near to laser quality. Laser printers are rarely colour unless you wish to pay a large amount of money. The price of inkjets and low-end lasers has dropped dramatically in the past few months. I suspect we have the PC market to thank for this as the prices of PCs have spiralled down owing to over-production and a certain amount of dumping by the Far Eastern manufacturers hit by the collapse of the stock markets in those parts.

A quick look at the majority of printer boxes tells you that most also come from the Far East, but this is not the only reason for their current pricing. If you've only paid £500 – £600 for a Pentium 233MHz PC you are unlikely to want to pay more than £300 for a printer. There has to be a price differential. This point seems to be between £200 and £250, with some very capable printers costing even less. It pays to shop around and there is a considerable difference between any RRP and the street price.

Remember that with inkjets the actual purchase cost is only part of the economic equation – the real cost lies in the consumables – cartridges and any special paper required to achieve the excellent results inkjets are capable of. Most brand new black cartridges cost in the region of £20 with their colour counterparts costing even more. A laser printer is generally more economical but not colour capable.

Win an HP printer
Turn to page 81 to enter our competition

Epson Stylus Color 850

The box proclaims this printer to be *the high performance **business** colour inkjet printer for the office*. At least we have a good idea of the target market for this printer and it shows that Epson think a good inkjet can challenge the dominance of laser printers in this area. Of course to do this it will have to be pretty good. It will have to be fast, something most inkjets are not, given the increase in speeds of most laser printers in recent years and it will have to compete on print quality.

Six pages per minute seems to be the norm when looking at low end laser printers. Epson's own range of high-end laser printers are capable of 20 ppm just to let you compare the difference between the Small Office, Home Office (SOHO) market and the large business, networked laser printer.



Stylus Color 850 – best buy

Print quality is usually expressed as a function of the number of dots per inch or dpi. My own Canon BJC-240 is capable of 360dpi. That really should be 360x360 dots per square inch. The Epson Stylus Color 850 boasts 720dpi on plain paper printing with fast drying inks and a remarkable 1440 dpi PhotoReal colour printing. By my calculation that's 2073600 dots per square inch – granted these are Super Micro Dots. Note here that I do know how to spell colour but the people at Epson insist on the American version – color.

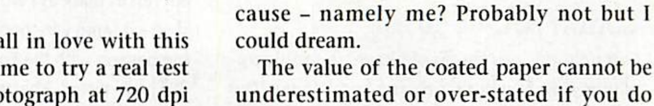
On unpacking the printer I was once again pleased to have a large desk to site it on – this printer has a large footprint. Paper is easily fed in from the top with a front eject path. When first switched on the printer goes through a long and presumably very thorough process of self-testing and print head cleaning.

The usual hunt for a printer driver revealed a Stylus-Col driver on my hard disc. Duly installed, it was time to test the printer. As I was only using normal 80 gsm photocopier paper I left the driver set at 360dpi (Best, MicroWeave). This was because for the higher resolution 720 dpi Epson recommend only using special coated paper.

The first page of text was clean, clear and crisp even on normal paper where a small amount of bleed might be expected. There are special inkjet plain papers but I have never found these to offer a significant advantage given their higher price.

Onto my standard colour test – ordinary paper and 360 dpi first. It passed with flying colours (no pun intended). Now it was time to push the envelope out a little bit with my standard colour test on coated paper at 720 dpi (Super, MicroWeave). This print was very noticeably slower but the wait was well worth it. The print quality at this setting and on the special paper was superb – the best I have seen on an inkjet by a very long way.

I was beginning to fall in love with this printer so now it was time to try a real test – a full page sprite/photograph at 720 dpi on coated paper. This would sort the men from the boys. Again it was very slow to print, as you might expect, but again worth the wait. Could I persuade Epson to donate one of these printers to a good cause – namely me? Probably not but I could dream.



The value of the coated paper cannot be underestimated or over-stated if you do want the best quality colour from this and other colour inkjets. The difference in quality cannot easily be stated, but qualitatively it is the difference between chalk and cheese, and good Stilton at that.

You may remember that I have a particular business need to print addresses on envelopes slightly bigger than A4 and a criticism of the otherwise excellent Hewlett Packard DeskJets was their inability to handle these. Guess what? The Epson can handle the envelopes. Now I am in love.

You may be wondering about the Super Micro Dots. The Acorn Stylus-Col driver does not support this resolution and so to take advantage of this feature you really require a Risc PC running Windows 95 or any updated Acorn drivers which become available. Beware, the Windows software comes on CD-ROM. As a footnote to this a quick trip to the Acorn Cybervillage website and a hunt through the latest Printer Definition Files revealed a PDF for the Stylus Color 800 which does support the 1440*720 dpi (MicroWeave) resolution.

As a general rule it is a good idea for those with Internet access to visit this site (http://www.cybervillage.co.uk/acorn/) to obtain new drivers. The site contains links to FTP the drivers as well.

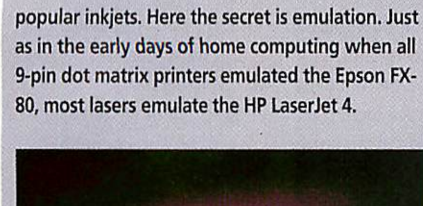
Conclusion

This inkjet would definitely not be out of place in any business setting as a complement to a small to medium sized operation needing colour capability. As for home use I would look first at the Epson Stylus Color 600 which is reviewed elsewhere in this article. Overall Best Buy.

★★★★★ Star Rating ★★★★★	
Ease of Use/Setup	★★★★
Performance	★★★★★
Features	★★★★★
Value for Money	★★★★
Overall	★★★★★

Olivetti PG 616

By way of a complete contrast I decided to look at a laser printer next. This can be slightly more problematical as there are fewer dedicated printer definition files for particular makes and models of laser printers than for the more popular inkjets. Here the secret is emulation. Just as in the early days of home computing when all 9-pin dot matrix printers emulated the Epson FX-80, most lasers emulate the HP LaserJet 4.





Not an exciting box

Emulation is just another word for *pretend to be like* in other words to use the Olivetti on an Acorn I will make it think it is a HP LaserJet 4. Easy peasy.

Laser printers tend to be much bigger and heavier than other printers so siting them requires a little thought unless you have a strong back. Having had to look in the manual to find out what the printer did emulate, I must say that I found the manual annoying and more than a little patronising. People who have bought a printer hardly expect the manual to use the irksome first person to be describing it – you know the sort of thing – *I am a high quality product.... Where to put me... How to supply me.....*etc. Just two pages of this nonsense drove me from the manual.

The printer itself looks like almost any other conventional laser printer, unlike an inkjet where a bit of design flair can usually be seen, laser printers are usually drop dead dull to look at. This was no exception. Interestingly the printer is not described as a laser printer but an LED printer. It appears to work on the usual basis of charging toner to a drum and then fusing this to paper, so laser shmaser let's call it a laser.

Having installed the HP LaserJet 4 driver it was time for a test. I always start and so should you with any form of test print/status sheet before attempting to print anything else. This status sheet informed me that the Olivetti is a high performance/capacity printer. Sixteen pages per minute is fast and the reason for this is that the Olivetti boasts the best thing in computing – a RISC processor. So a RISC machine and a RISC printer – there really is a God.

600dpi is good and the printer comes with a 500 sheet input tray as standard. This is a further advantage of a laser printer – the ability to handle more paper than most inkjets. One annoying feature is that the standard kettle lead type power cable which came with the printer had a continental style 2 pin plug. A page of text from *Impression* took one minute and 22 seconds to appear – that's one minute and 17 seconds to get to the printer and five seconds to print.

A more complex 19 page *Impression* document incorporating text and graphics and printed at 600 dpi took over 10 minutes. So where was the fabled 16 pages per minute? It was rather like having a car with a speedo indicating a top speed of 130mph but knowing it could never get above 90mph – very frustrating.

I reduced the print resolution to 300 dpi which is still very acceptable on a laser printer and my 19 page test document and this brought the time down to approximately four minutes. I know this is to be expected and it illustrates an important point for the purchaser – treat the claims made for a printer carefully – they will usually be best case scenarios.

Another way to speed up laser printer output is to insert more memory – fortunately the Olivetti takes cheap, standard SIMMS and not nasty, expensive proprietary stuff.

Conclusion

The Olivetti PG 616 would make an ideal printer in a high output, high-quality environment. It will act as a network printer server in an office. For the home user, and by comparison to the more versatile colour inkjet, it fares less well. The initial high outlay is only partly offset by cheaper consumables.

★★★★★ Star Rating ★★★★★	
Ease of Use/Setup	★★
Performance	★★★
Features	★★★★
Value for Money	★★
Overall	★★★

Epson Stylus Color 600

This printer can be considered to be the little brother (or sister) of the Stylus Color 850. It has many of the same features but with a more domestic feel. It is certainly not marketed at the office user, unlike the bigger 850.

It has a very good solid feel and those nice big Epson colour/black cartridges that give the impression that you will not be running to the shops every five minutes to part with over £25. The printer boasts the same PhotoReal colour printing and the 1440 dpi capability as the 850 but with a slightly lower ppm of six rather than eight. We have seen how these pages per minute figures really depend very much on the page in question.

This was the only printer tested for ➤

Canon BJC-4650

Certainly this printer would have no problems with my slightly bigger than A4 envelopes. This is the first A3 printer I have looked at and is wider than most other printers as you would expect, but Canon have stuck with the near vertical paper feed, so the printer is not unacceptably big. When siting the printer you do have to remember to leave plenty of room at the front for the eject path if you are going to use A3 paper.

This Canon holds a combined CYM colour cartridge and a separate black cartridge – I think this is a sensible arrangement for most colour inkjets and gives the best balance of economy over ease-of-use. Some might argue for three separate colour cartridges but these tend to be so small as to negate the economics of their use.

The nearest printer definition file I could find was one for a Canon BJC-4550. In fact this is two drivers in reality – one for A4 printing and one for A3. Both are loaded in the normal way and you switch between the two on the iconbar depending on whether you are using A4 or A3 paper. This is a bit of a faff and, on examining the printer configuration, I found that the highest resolution was only 360 dpi (HQ). As the test print sheet and manual informed me that I could expect 720x360 dpi it looked like the problem of driver release dragging behind printer release was going to be a problem for a pure Acorn user.

My standard text only page was crisp and clear but not as black as I would have liked – it fared very poorly by comparison with the Epson and HP I have tested. My standard colour test on plain paper produced the worst colour print I have seen in a long time – streaked with clearly visible gaps. The same test on glossy paper improved the colour but the gaps were still there.

I was very disappointed – my own standard Canon BJC-240 could do better than this. It seemed clear already that Canon, once the leader in colour inkjet technology, had slipped a considerable way behind Epson and Hewlett Packard and indeed the quality of the Canon colour looked decidedly dated. I realise that the lack of a proper high resolution driver in this case is a problem which cannot be put at the Canon door.


Okay, if you want A3 output

The strength of this printer lies in its ability to handle A3 paper; a job which it performs faultlessly, although still with the same resolution problems. The printer does have the ability to deliver the Canon Photo Realism quality and can be adapted to become a colour scanner. Neither of these features was tested.

Conclusion

I would not recommend this printer to anyone other than a Risc PC owner able to take advantage of the proper Canon drivers on the Windows side of a PC card. This is obviously a sorry state of affairs, but there it is and perhaps by the time you read this the Acorn PDFs will have caught up enough for all of us all to take advantage of what should be a very capable printer. Even then, unless you have a real requirement to print on A3 or any paper bigger than A4, I would advise you that there are better printers available.

★★★★★ Star Rating ★★★★★	
Ease of Use/Setup	★★★
Performance	★★
Features	★★★
Value for Money	★★
Overall	★★

which I had access to a dedicated PDF. There actually is a Stylus Color 600 driver.

The front panel can be awkward to get to if you're using the printer to the right of you, as you have to reach across the paper eject tray, but otherwise the ergonomics of its use present few problems. Paper is fed from the near vertical, as in the Canons, and ejects to the front.

My first standard text test was at 360 dpi on normal paper. At this point one characteristic of the printer becomes very apparent – it makes a lot of noise, whirls and clicks, buzzes and hums. In fact, for a supposed quiet technology, Epson have managed to produce quite an obtrusive little printer. You might expect this on start up and self test but not on printing.

Get the big brother if you can

That being said, the first test was adequate – the text was black and clear without being particularly crisp. The same test on coated paper again showed the value of good paper – clean, clear, crisp and black. The standard test for colour at 360 dpi on plain paper was good but on glossy paper was excellent. Of course, the higher resolutions should give even better results – the Journalist Information Pack which arrived with the printer included a picture printed at 1440 dpi, on Photo Quality Inkjet Paper showing a reef scene.

This was presumably printed using the Windows drivers and so I attempted to get an image as close to this for comparison. Again, be aware that the Windows drivers are on CD. Using the image of the girl swimming underwater on the Images slideshow was near enough. The reproduction was very good and near photo quality. As with all these things, the quality of the original image is important. Another important point about the Epson system is that it requires no special ink cartridges or additional drivers.

Conclusion

On the Epson RRP list (which will be about 17 per cent higher than the street price) there is a difference of about £100 between the 850 and the 600. If you can afford it go for the 850 – it is slightly faster and more robust. If not, the 600 is still an excellent printer and would be my second choice as Best Buy of this month.

My only grouse was that the printer was delivered with one of those useless 2-pin power leads – why do they do that?

★★★★★ Star Rating ★★★★★	
Ease of Use/Setup	★★★★
Performance	★★★★
Features	★★★★
Value for Money	★★★★
Overall	★★★★★

Contact details

Availability: Contact your local dealer

Epson	Tel: 01442 261144
RRP as of May 1998:	
Stylus Color 600	£193 ex VAT
Stylus Color 850	£319 ex VAT
Canon	Tel: 0121-680 8062
BJC 4650	£279 ex VAT (£329 inc scanner cartridge)
Olivetti	01908 354537
PG 616	£799

TEL 01727 840303 FAX 01727 860263 EMAIL sales@beebug.co.uk

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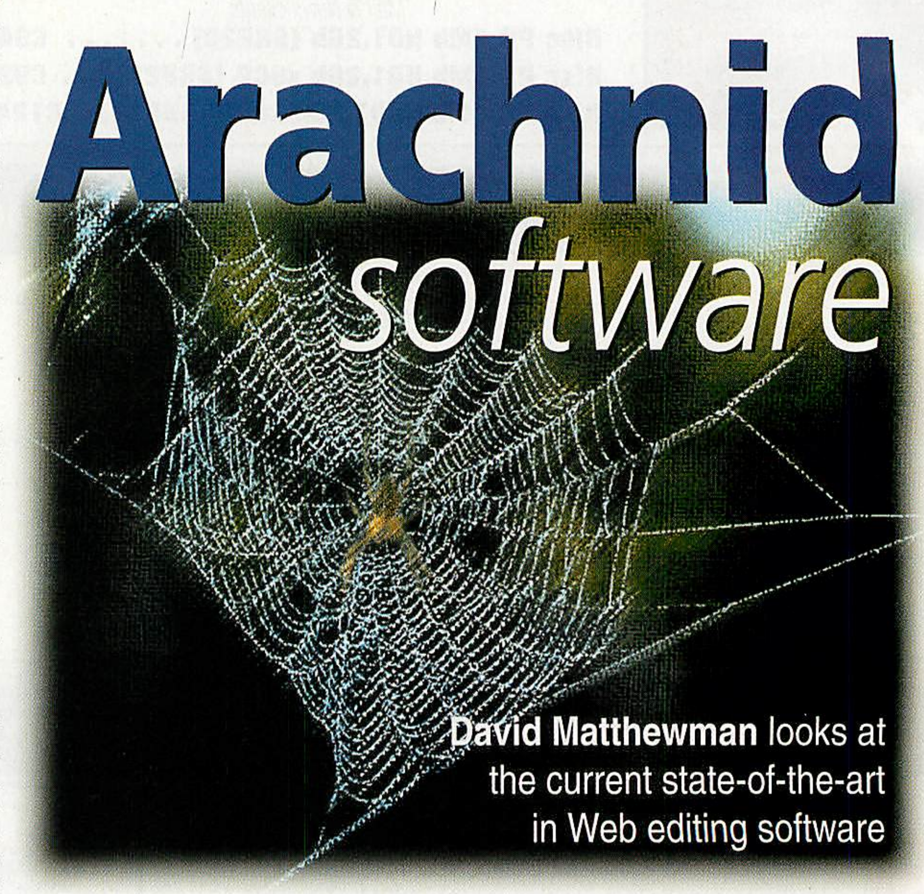
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Arachnid software



David Matthewman looks at the current state-of-the-art in Web editing software

A couple of years ago, a new property was constructed in the Acorn village, marked 'Web authoring software'. This property is now becoming seriously overcrowded and some of the neighbours from DTP Avenue are expressing an interest in lodging there, at least on a part-time basis. Stroll past this property for a moment, and hear the occupants arguing it out...

There's the purpose-written HTML software. This comes in two flavours. There's the source editors that edit the HTML at the raw text level and the visual editors that give you a view more like that a Web browser would give.

The source editors cry out: 'You want *ultimate control* over your HTML! If someone invents a new tag, you want to be able to insert it with all its convoluted attributes. You don't need me to display a heading in 18pt bold text – you know it's never going to look exactly right in the browser and anyway, you can look at the mass of tags and work out what the page is going to look like. Don't say "mauve", say "#cc66ff"!'

Then the visual editors take you to one side and whisper in your ear: 'You don't want to be doing with all those complicated tags cluttering up your editing window. Think how much easier it would be if you could *see* what you were creating, instead of having to remember which image you were inserting with that <img> tag. So what if it will look different in your browser? I'll still get closer than that text-only display the source editor's giving you.'

At this point, some DTP package or other usually wanders over, a smug expression on its face. 'Why are you bothering with them?' it asks. 'I've just learnt how to export HTML – it's dead easy, in fact – and you can use me to do all your printed documents as well. In fact, you remember that mass of leaflets you've created in me over the years? I can put those straight on the Web for you, with no messing about in any other program.'

And the worst thing about this cacophony is that they all have a point.

Past reviews

I've looked at website editing software on the Acorn platform a couple of times before, most recently in last September's *Acorn User*. Pam Turnbull reviewed the HTML import and export of *TextEase* in the April issue this year. I'm not intending to repeat much of what was said in those reviews and I'll refer to them in a number of places in this article, so you might like to seek them out for the full picture.

So how have the occupants of Web Editor Towers changed since I last visited them?

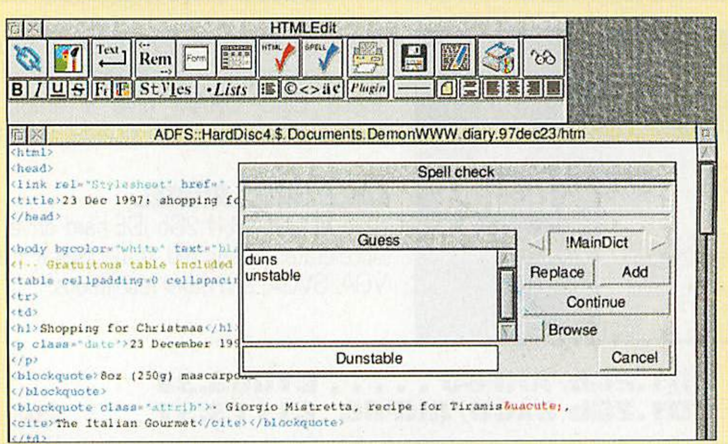
HTMLEdit and co

HTMLEdit is now on version 4. The last version I reviewed was version 3 and since that the editor has become slicker and (at last) has syntax colouring. It has grown away from its *Edit* roots sufficiently that it no longer lets the whole package down. Other enhancements include image and link validation and the addition of a 'plugins' window which allows you to insert tags for Java, JavaScript or plug-ins.

R-Comp's companion to *HTMLEdit* – the *Web Designer's Toolkit* – has also had a facelift in some areas. Both the table and frame creation 'wizards' have been updated, although I have to say that both these utilities let the package down a little. They have the appearance of having been written as a 'bare minimum' implementation by someone not entirely familiar with tables and frames.

For a start, you can only specify percentage widths, while both tables and frames can also be specified using pixels. *Framer* allows you to turn off frame borders, but doesn't do so sufficiently for it to work on both *MSIE* and *Netscape*. *WebTable* allows you to set the horizontal alignment for rows but not for individual cells (the manual states that alignment can only be applied on a row basis, which is incorrect) and doesn't allow you to set vertical alignment at all. You can always add this later in *HTMLEdit*, of course, but you shouldn't have to.

ImageConv, also in the toolkit, has been improved to support PNG and paletted GIF. It will also convert from BMP, TIFF and Clear files and, when converting to GIF, has a number of useful palette options, which is important when converting a 24-bit image. My only gripe is that



HTMLEdit's source editor has benefited enormously from syntax colouring

WebSpider

WebSpider from Dalriada has come on a lot since the first review. It has got a lot more stable, for a start. I'd previously had great difficulty importing already-created sites into *WebSpider* – this is now a lot more reliable. Having said that, I couldn't find any way to import directories, although creating them within *WebSpider* and importing the contents seemed to work just fine. Also I was puzzled as to why all my pages were turning out black until I realised that *WebSpider* doesn't support named colours and was interpreting 'white' as '#000000' – only a minor gripe.

The editor in the latest version of *WebSpider* is way better than the earlier one and the best visual editor on the Acorn. The editor is very DTP-like, supporting drag-and-drop of text. It's still not totally stable though, I got a few type 5 errors when using it, which is annoying because you lose work.

WebSpider's tool bar is neater than *HTMLEdit's* and the user interface generally has a more polished feel. That said, *HTMLEdit* supports a few more tags than *WebSpider*, so that's probably understandable.

WebSpider now supports tables natively, as opposed to using a separate program to create and edit them. Table support is very good, with most options that you'll need, although I found it a little buggy when selecting multiple cells and creating tables within tables can cause problems.

In general, though, you insert your table, drag rows around to resize them, place both text and images within cells, and join and split adjacent cells as much as you like. Image maps are also supported natively; again, a welcome improvement on the older version. This doesn't matter so much in a source editor like *HTMLEdit*, but in a visual editor it's an awful lot more convenient to be able to edit things like tables and image maps in position than to have to switch to another helper to do it and paste the result back in.

WebSpider now also supports frames. The frame editor isn't perfect (like *HTMLEdit*, it probably won't lose frame borders on all browsers and has an annoying habit of creating a frameset with **rows="50, 100%"** instead of **rows="50, *"**) but it's a lot better than nothing. Frames always present a visual editor with problems, as there's no easy way to present both the framed and non-frame content and *WebSpider* does the best it can under the circumstances. Java applets can be inserted, too.

I had previously noted that *WebSpider* wouldn't import JPEGs. It will now, although I have some reservations about the way it does it. If you drag a JPEG to a *WebSpider* window, you get a JPEG. If you drag a sprite, you end up with a file with a .GIF extension, even for deep sprites which would more usually be converted to JPEGs. At first I thought that it was simply converting all sprites to GIFs, but it's not that simple. A 24-bit sprite will actually be converted to a JPEG with a .GIF extension.

I suspect that, in practice, most browsers will cope with this, but it's a bad thing to do. Most servers will send a .GIF file with the MIME type of image/GIF and it's quite possible that the browser on the far end might complain if it doesn't actually get a GIF file as a result. Mind you, I don't want to harp on too much about what's presumably a simple bug to fix.

If you read my earlier review, you'll remember that I mentioned *WebSpider* wouldn't import text longer than a paragraph. This has now been fixed, making *WebSpider* a good choice for marking up existing text documents for publishing to the Web. Having said this, when I imported a large (30K) text file into an existing document, it slowed down a lot so I suspect that its (usually very fast) speed may be a little sensitive to either the amount of text in the file or the number of paragraph breaks and similar sections.

While *WebSpider* supports most modern HTML tags, it still doesn't let you enter ones that it doesn't support. This is a little limiting, although I can fully understand why the limitation is there. It's rather awkward for a visual editor to try to display tags that it doesn't understand sensibly.

WebSpider's visual editor presents the page well and makes it easy to edit

these aren't present when converting *Draw* files. *Draw* files are effectively 24-bit images, so the same considerations should apply really. It also seems to be impossible to anti-alias *Draw* files to any other colour than white – the anti-aliasing and transparency is very welcome, but if you have a non-white Web page background, you're in trouble.

WebSpell is a new package since the last review. It checks the spelling of your Web pages which is a vital step in publishing Web pages, since there's nothing more unprofessional than seeing pages full of typos. I should know, I've written a few in my time.

Traditional spell-checking software usually has problems with Web pages because of all the tags – it really needs to be aware of the HTML syntax at the same time, as *WebSpell* is. The program can share dictionaries with *Ovation Pro* and other software that uses the *!Words* resource, which is efficient. It comes included with Dutch and German dictionaries.

Product listing

Product:	HTMLEdit 4
Version reviewed:	4.14 (15 May 1998)
Price:	£50 (£15 upgrade from version 3.5)
Supplier:	R-Comp
Tel:	(01925) 755043
Fax:	(01925) 757377
E-mail:	rcomp@rcomp.co.uk
WWW:	http://www.rcomp.co.uk/

Product:	Web Designer's Toolkit +
Version reviewed:	Various (13 May 1998)
Price:	£30 (£10 upgrade from earlier)
Supplier:	R-Comp
Product:	WebSpell
Version reviewed:	1.10 (16 Oct 1997)
Price:	£15
Supplier:	R-Comp

Product listing

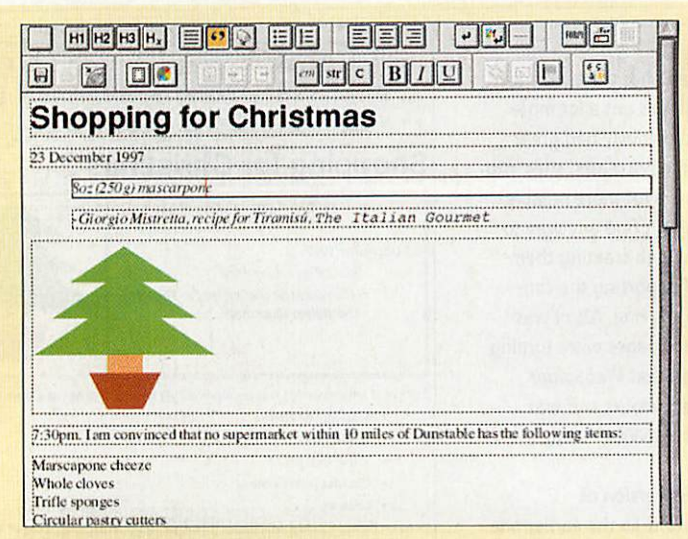
Product:	WebSpider
Version:	1.40b (12 May 1998)
Price:	£60
Supplier:	Dalriada Data Technology
Tel/fax:	01926 492459
E-mail:	sales@dalriad.demon.co.uk
WWW:	http://www.dalriad.demon.co.uk/

WebMaster

WebMaster from IMS is the closest rival to *WebSpider* in the house of Acorn Web editors. While it's good (and a *lot* more stable than when I last reviewed it), it's clearly suffering from IMS's recent concentration on the portable project and the Acorn-Psion5 link software. It hasn't been updated since February and the feature set is now lagging severely behind *WebSpider*.

It's possible that the price tag of £99 had put people off buying *WebMaster* – I certainly felt that it was a little too high – and that IMS had sold too few copies to make it worth the company's while to develop it. I hope this isn't the case, because the product actually has a lot going for it and the price has now dropped to a more reasonable level.

WebMaster takes the sensible idea that you're likely to want to upload the pages you've created to an ISP further than the other packages. If you configure it correctly, it has a one-button solution that will ftp your site to your ISP (you do, obviously, have to be on-line at the time). It will even do an incremental upload, sending only those pages that have changed. With all the other packages you have to do this yourself and, while it's not exactly difficult, it's handy to have *WebMaster* do it for you. The fact that it can create Tar archives is useful, too.



WebMaster doesn't support tables, so the one at the top of this page is lost

WebMaster's import of existing sites is a lot better now – basically, it didn't work and it does now. However, it quickly becomes painfully obvious that *WebMaster* doesn't support much beyond HTML 2.0. Not supporting frames and Java is forgivable; not supporting *tables* is less so. And although *WebMaster* allows you to enter tags that it doesn't understand so you can, at a pinch, enter a table manually, it will strip table tags out of

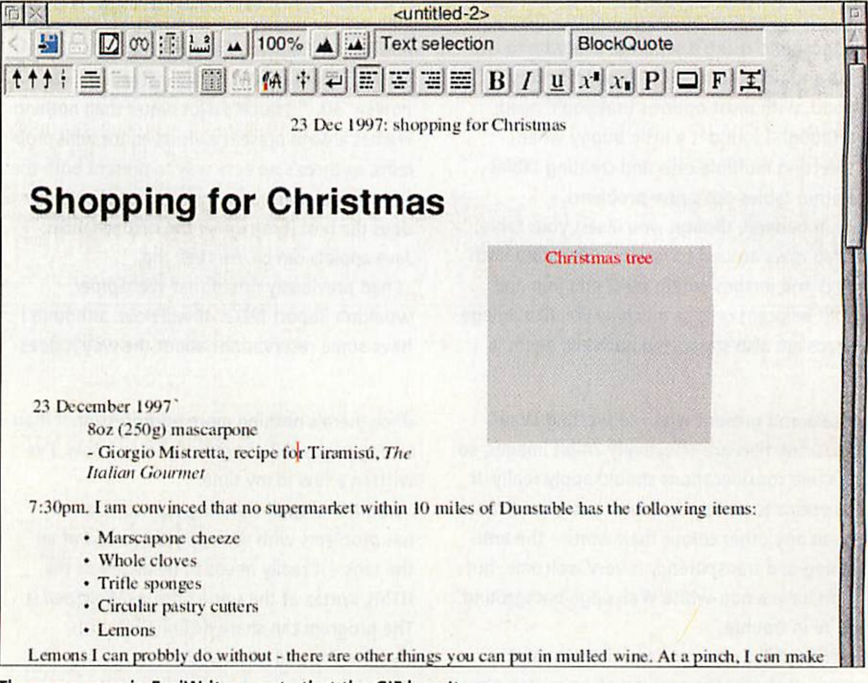
EasiWriter & TechWriter Pro

Perhaps the most exciting thing to have happened to HTML authoring on the Acorn in the past six months has been the introduction of an HTML read/write mode to the two Pro editors from Icon Technology. The HTML mode is functionally identical in *TechWriter Pro* and *EasiWriter Pro*, so in this review I'll just concentrate on *EasiWriter Pro*.

EasiWriter Pro is a fully-fledged (and very good) wordprocessor. The danger with writing HTML with a program like this is that wordprocessing and writing HTML are two different tasks that only overlap in certain areas. The typographical and positional control that you take for granted when doing wordprocessing simply doesn't exist in HTML. On the other hand, very few wordprocessors understand links to other documents, a fundamental part of HTML.

I'm happy to report, therefore, that the latest version of *EasiWriter Pro* understands links perfectly. Simply select an area of text and choose 'Link...' from the 'Misc' menu option, and you have created a link. To get round the problem of having extra, non-HTML features in a wordprocessor, there's a simple HTMLStyles template which you should use to create all your HTML documents within *EasiWriter*.

Creating HTML documents in this way gives you the advantages of using a powerful wordprocessor to create your content. You get a good spell-checker, an excellent user interface and it's fast too. You don't have to learn a whole new way of doing things for the Web – just a few techniques that will be different. Now, if this were the PC, I'd be talking about HTML import and export from *Microsoft Word* and I'd be using words like 'travesty', 'barge pole', 'avoid' and 'plague'.



The same page in EasiWriter – note that the GIF hasn't imported because I don't have ImageFS on my system

Happily, it's not the PC, and the HTML export from *EasiWriter Pro* actually looks as though it has been written by someone who knows what HTML is about. Granted, it uses a <basefont> tag to set the overall font size, which is treading on dangerous ground near the WYSIWYG quagmire, but it otherwise generates admirably clean HTML. If you need to do more to it, you can tidy the HTML up in a text editor or something else afterwards.

In fact, if you're doing anything at all complex, you'll probably want to do this, but the key point is that when using *EasiWriter Pro* you can be confident that it will generate good enough HTML that editing it afterwards will be easy.

EasiWriter Pro understands tables (but not forms, which are very alien to a wordprocessor) and is a good, solid HTML 3.2 authoring package. Images

imported files which leaves a nasty mess.

On the plus side, *WebMaster* does now support forms. It's also a lot more stable than it used to be, although I did manage to crash it by attempting to import a large text file, so it's obviously still got some problems.

WebMaster's image conversion could be better too. Although it does support JPEGs, it *doesn't* support deep sprites and will refuse to import them. You'll have to convert them to a JPEG first using some other program. In fact, both *WebSpider* and *WebMaster* could benefit greatly from looking at the image conversion utility in the Web Designer's toolkit.

Product listing

Product:	WebMaster
Version:	1.10 (15 Feb 1998)
Price:	£69.33 inc VAT
Supplier:	Innovative Media Solutions
Tel:	01934 522880
Fax:	01934 522881
E-mail:	sales@ims-bristol.co.uk
WWW:	http://www.ims-cdc.demon.co.uk/

(including *Draw* files) are exported through *InterGIF*. This has the side effect that deep sprites are converted to GIFs rather than JPEGs, which could be improved upon, but is otherwise a good solution. *TechWriter Pro* can also export embedded equations (which are basically *Draw* files) as GIFs.

Product listing

Product:	EasiWriter Pro/TechWriter Pro
Version:	4.08 (15 Mar 1998)
Price:	EW Pro: £155 inc VAT and P&P, TW Pro: £237 inc VAT and P&P
Supplier:	Icon Technology
Tel/fax:	(01778) 590563
E-mail:	sales@iconsupport.demon.co.uk
WWW:	http://www.iconsupport.demon.co.uk/

TextEase

Softease have a reputation for re-writing the specs for what a DTP package should and shouldn't be able to do. *TextEase* has always sat somewhere between a multimedia authoring tool and a DTP package (you can include Replay files in it, for a start), so it comes as no surprise that HTML import and export has now been developed for it.

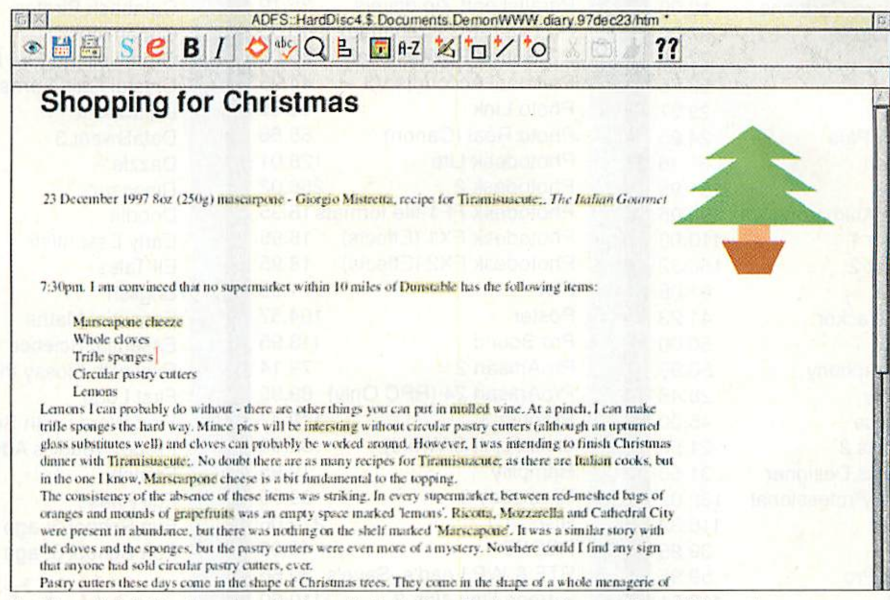
The HTML reader and writer hasn't actually changed since Pam Turnbull's review in the April issue of *Acorn User*, so I've got little to add here. The HTML export of *TextEase* is very different from that of every other program I've come across. Using tables, *TextEase* tries to get as close as possible to the look of the original *TextEase* file. The astonishing thing is that it often succeeds.

There's a price to be paid for this. You usually won't end up with files that would win awards for clean HTML. Overlapping text and graphics are converted into one big graphic. The design *Textease* produces is a little inflexible and degrades badly on non-table browsers and text-only browsers. But that's almost beside the point – if you're intending to write clean, degradable HTML you shouldn't be using *TextEase*. If you want to be able to use a DTP package to design a page and then export that page more or less intact, *TextEase* will do it.

Currently, the HTML readers and writers for *TextEase* are in serious need of more work. Anchors don't work properly and *TextEase* is very unhappy importing complex table layouts. The separate HTML conversion utility is a clumsy way of creating HTML pages – it really should be integrated into the main program as the reader is. But, for all its faults, *TextEase* is worth considering, especially if you're more concerned about creating a few simple (but pretty) pages than designing a complex website.

Product listing

Product:	Multimedia TextEase HTML filters
Version:	1.1 (Nov 1997)
Price:	£85 (HTML reader/writer £25 for existing TextEase users)
Tel:	01332 204911
Fax:	01332 609224
E-mail:	sales@softease.co.uk
WWW:	http://www.softease.co.uk/



TextEase highlights the misspelled words, including the interesting spelling of 'cheese'

Overview

Which Web editor you use is very much a matter of how you want to work. If you're happy working at the source-code level, *HTMLEdit* is the one for you and I'd recommend getting at least the *Web Designer's Toolkit* to go with it, if not *WebSpell* as well. All three are bundled with *Webster XL* (a JavaScript-aware Web browser) in *HTMLEdit* studio for £100, which would be worth considering. *HTMLEdit* is also the best solution for editing an existing site.

Of the two visual editors, *WebSpider* is easily the better. *WebMaster's* HTML support is looking very dated and needs an update if it's not to drop out of the running totally. My only reservation about *WebSpider* is that it still crashes more than I'd like. It is certainly very user-friendly and will create a good website without your needing to learn HTML in detail.

If you have *EasiWriter* or *TechWriter*, upgrading to the latest Pro version would be a very good idea, as it's the class of the field for HTML import and export from wordprocessors (on any platform). It's also worth considering getting *EasiWriter Pro* to write your HTML files in as a first step if you're likely to be producing a text-heavy site – you may want to 'post-process' the HTML files if you want a complex site design, but that's actually very easy with the HTML that *EasiWriter* produces.

TextEase won't suit everyone, but if you already have it then the HTML reader/writer is a worthwhile addition. And the ease of use of the program itself makes it a good choice for schools to allow students to create simple Web pages.

In short, Web Editor Towers in the Acorn village is inhabited by some very different characters. They're mostly experts in their own particular field but, depending on how you work, you're likely to find that you agree particularly well with one. And don't forget the cheaper end of the village – PD Terrace is still as full of useful Web tools as ever.

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Show stoppers

Chris Hughes – Joint co-organiser

Both myself and co-organiser Mike Wilson were very pleased with the way the show went. Thanks must go to all our helpers (33 in total), mainly WACG members, who worked very hard to ensure the show's success.

Without the support of the various Acorn companies, in the form of advertising, printing and just being there we would not have had a show. It was good to see some new or less well-known companies, both large and small, for the first time showing that there is still life in the Acorn world.

Attendance overall was around the same as last year at about 2800. There was about a 15 per cent increase of visitors on Saturday compared to last year, strangely Sunday was actually down on last year. (We now think the good weather may have actually gone against us on Sunday!)

Prior to opening on Saturday, the crowds stretched out from the stadium hall, down the approach road and onto the main road. Visitors came from all over – Belgium, Inverness, Brighton, Plymouth, Norwich, Cardiff, Swansea, even Australia!

Some £1593.70 was raised for charities on the charity stall.

Website competition



Winner of the Best Commercial Acorn website (sponsored by *Acorn User)* was Acorn Cybervillage. Winner of the Best Enthusiast website (sponsored by the WACG) was Arcade

Johnny Ball was on the Eesox stand on the Saturday having his photo taken with visitors. It was all done digitally with the Olympus 820L camera and placed on an autographed Gold CD with Eesox's IDE CD Writer for the visitors to take away.

Large crowds formed around the prototype 'Peanut' on the IMS stand. Queues formed to see Phoebe 2100 in its yellow case!

Lots of new software was either launched or on show for the first time. A few examples are – *Personal Accounts 4* from Apricote Studios, *Ancestry+* from Graham Crow Software, Project *Avante* was being presented on the Astute Graphics stand, four new titles from iSV were released, *Sleuth 3* from Beebug, *Impact 3* from Circle Software, R-Comp/R-Comp Interactive launched a whole string of new items or updated software for both the games market and their HTML range.

Artex Software of Germany were showing off a number of games they had just released and Simtec/Causality were showing off their "CATS" motherboard.

Ian Burley – News editor

You have to hand it to them – the Wakefield guys did another superb job with this year's Spring Acorn Show. Even on FA Cup Final day, 2,000 people filed through the doors and all the exhibitors I spoke to on the Saturday were very happy with the way things were going.

Undoubtedly, the two stars of the show were the newly-named Phoebe 2100 from Acorn and the Peanut notebook portable prototype from IMS. Both these products demonstrate that the Acorn market is alive and kicking. Coincidentally, both computers are priced at £1,500, give or take a few pounds, and their developers are focusing on this year's Acorn World Show as the final launching pad for the finished product to sell.

Both represent tough challenges in their own way, but I think they have a good chance of enjoying success. As for Phoebe – there was a lot of discussion about both the name and that colour. Personally, I love the yellow – it's a bold and brave statement and I think Acorn need to stand out from the crowd of beige. My opinion was shared by others I spoke to at the show but there were plenty who weren't so enthusiastic. Like the VW Beetle, either you like it or you don't; but that's OK. I spoke to several dealers at the show and it's likely some will be offering re-spray jobs as an optional extra.

Mike Tomkinson – Business editor

I look forward to the Wakefield Show. It's only about 20 miles or so down the motorway from Bradford to Wakefield, so myself and the little lad set off on a gloriously sunny Saturday morning. You know, the type that make you glad to be a Yorkshireman who owns an Acorn.

There was much excitement about the Phoebe and the Peanut but more of those elsewhere. The show itself seemed much more organised this year, without feeling slick. WACG do a really wonderful job and all Acorn users owe them a debt of gratitude for providing such a good regional Acorn show.

Apart for the new machines – which were not for sale – my general impression was that it was busy and most stalls seemed to be doing brisk business after a relatively slow start on the Saturday morning. Many people seemed to be deciding on what their next purchase should be.

On the business software front, there was a new program called *Invoice* from RaspSoft



Acorn User present a rundown of the highlights of the Wakefield show

but little else other than general productivity software. There were some real show bargains to be had and I am sure most buyers will have saved more than their admission/travel costs.

One thing which did strike me – somewhat sadly – is that we seem to be a somewhat ageing and mature population. If the four ages of Man are lager, Aga, Saga and gaga we seemed to have plenty of Aga and Saga representatives. Where were all the younger Acorn users? Perhaps they were there on Sunday when, unfortunately, I was not?

David Dade – Comms editor

Innovative Media Solutions attracted crowds to look at their interesting Peanut RISC OS laptop portable. Its specification includes a standard 115kbps serial port. A PC card slot and IRDA infrared transducer are possible additions to the final design. Check out http://www.ims-cdc.demon.co.uk

R-Comp were showing their *HTML Studio* Web page authoring and design suite including *WebsterXL* now supporting *Javascript*; ideal for viewing Acorn's new website. More details can be found at http://www.rcomp.co.uk

Argo Interactive were sharing a stand with ANT Ltd, reflecting their new co-operative relationship. Argo's Internet connectivity deals feature their childrens' *ArgoSphere* website and Education Online service. ANT were offering 20 per cent show discount on their *Internet Suites* and *OmniClient II* site licences.

Jonathan Duddington was showing off the latest version of *Pluto*, his Internet e-mail and news reader that can also speak – see http://www.argonet.co.uk/users/jsd/. Bajorasoft on the Data Store stand have a useful little utility called *InterLink* to simplify launching the release components of Acorn's *!Browse* Internet suite.

MultiLink, The Really Good Software Co's 8-bit BBC Micro to Acorn 32-bit file transfer program is still selling well, and new product *Connect2* is on the way to simply interconnect any Acorn 32-bit machines. Phone 01582 761 395 for more information.

Pam Turnbull – Education editor

With the Literacy Hour concentrating the mind, there are a good many literacy programs about. However, this means that other projects with a *non-core subject* basis are being put on ice.

Although this is not the optimum time of year for education releases, there were some interesting things to be seen at the show. Resource (01509 672222) were showing *I Can Write* for £35 – previewed at Acorn World and now almost ready for release. It provides frameworks for writing and you move through the pages using picture prompts or topic related wordlists, whether writing about yourself or creating book reviews, letters, reports, stories and so on.

Sherston (01666 840433) have produced some interesting secondary curriculum modules costing £35 each. There are three discs on science – covering energy forms and conversions, generating power and renewable energy sources. Two geography modules deal with maps and, in particular, grid references and symbols, contours, distances and bearings. For history teachers there is a disc on 1066 that looks at the rivals for the throne. The idea behind these is to produce a classroom resource which will stimulate discussion as well as providing on-screen activities to test knowledge.

SEMERC/Granada Learning's (0161-627 4469) releases of *All About Weather* and *All About Shape and Space* are again delayed on the Acorn because the Macromedia Director Reader is still not ready. However, they did have *Predit IT*, *Dazzle Plus* and *My World 3*.

One program to watch out for is *FuzzySheet* from ExpLAN (01822 613868). This is a spreadsheet for anyone who hates statistics. It's ideal for surveys as graphical cells handle indistinct data from degrees of liking to wind strength. Three versions of the software are planned for schools, universities and business. Watch this space.

Prize draw winners

Chris Cox carried out the late prize draw on behalf of the User Group. There were some 15 prizes with the top prize being a Acorn NC from Acorn plus 12 months subscription to Argonet donated by ArgoNet which was won by Mr Cahill of Cumbria. Thank you to all those who donated prizes.

Mike Cook

Yet again the Cup Final provides a distraction and disappointment on the first day of the show, but you can't disguise the vibe of quiet confidence. The visitors are so much more self-assured this year, they know what they want and go out looking for it. Far fewer beginners and neophytes – it could be that we are becoming more computer literate or that Acorn is just not attracting enough new blood.

This time I actually meet people who have made my projects, along with those who are content to let me make the projects for them. Plenty of new products were on show and although many were prototypes it shows that the Acorn market is alive to new opportunities. Two new 'non-Acorn' RISC computers, one not even bothering to run RISC OS.

Behind closed doors Phoebe is glimpsed, not the outer most moon of Saturn, but Acorn's latest satellite. First impressions are that it looks like a yellow PC, but beauty is more than skin deep, and it appears to be a tantalising mix of the familiar and the new. But Acorn shows are more than the products, they are a chance for spiritual refreshment, to know you are not alone, you're not the only sane one in a PC-mad world and that's something we can all take away from the show. AU



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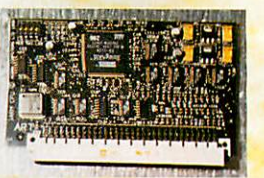
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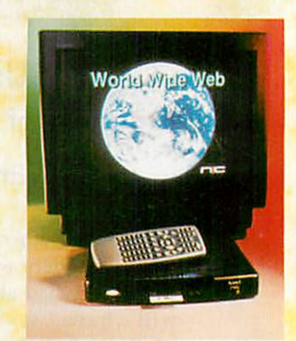
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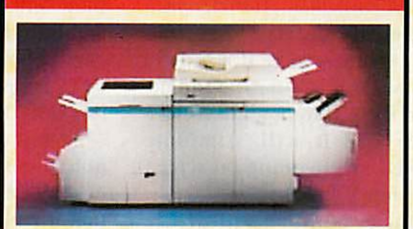
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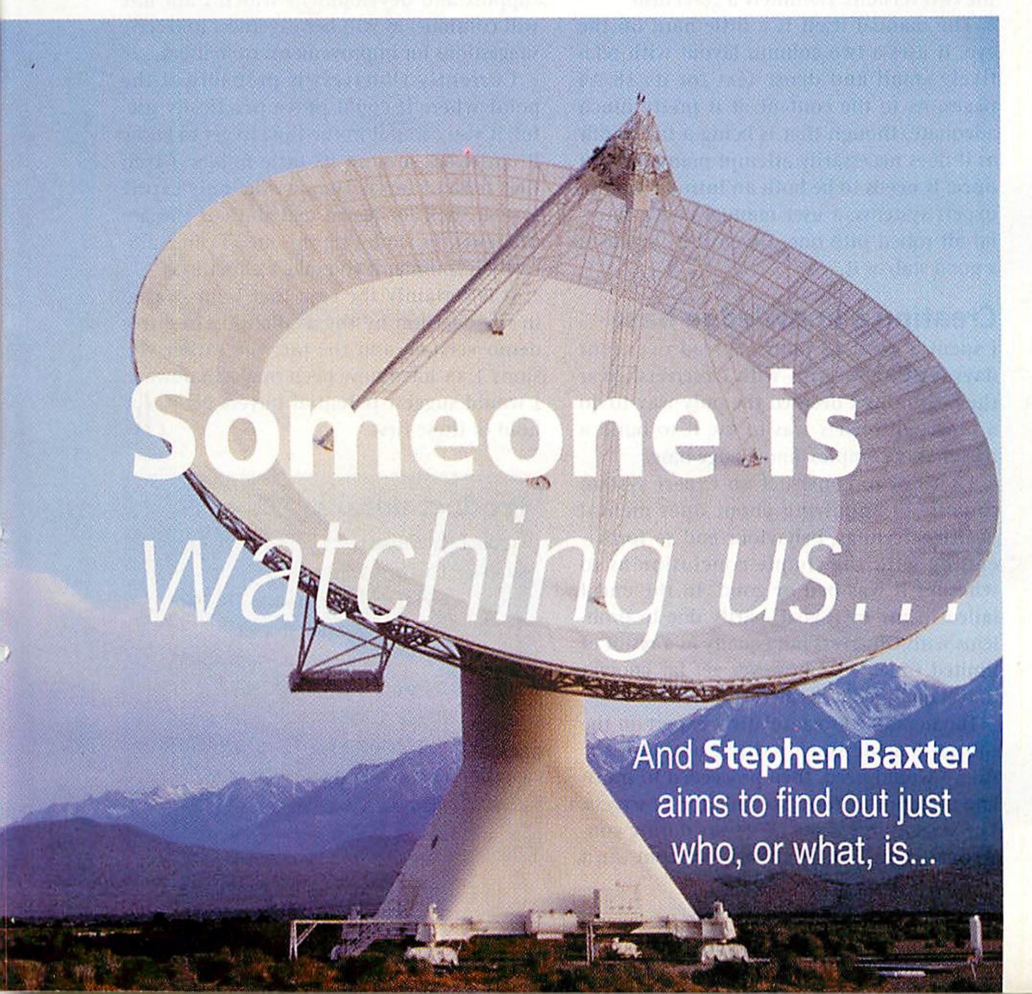
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SECOND HAND ACORN COMPUTERS



The concept of intelligence, machine intelligence particularly, has intrigued many people for decades, from philosophers to sci-fi authors. However when we try to drag ourselves back into the real and present world we discover reality is very different from our virtual fantasies. Despite this shattering of illusions, there is both much promise for tomorrow and a great deal of practical interest for the present.

Any attempt at creating so-called artificial intelligence has usually taken one of two distinct tracks. Described as either top-down or bottom-up, these labels indicate fundamentally different approaches to the creation of intelligent behaviour.

Bottom-up describes a system where elementary rules, often mimicking those thought to act in the natural world, are played out in a software environment with the aim being to create emergent behaviour that exhibits intelligence-like characteristics. Examples of this include cellular automata, where simple local rules can give rise to complex global phenomena and neural nets where individually trivial neurons collectively demonstrate abilities such as learning.

On the other hand, Top-down, as the name implies, turns this on its head and directly tries to force an intelligent performance by coding it directly via as many distinct and arbitrary instructions as are required to produce the desired behaviour.

While the former offers more hope for the creation of true intelligence in the long-term future, the latter is often of greater immediate use when we require no more than the appearance of some aspects of intelligence within rigid boundaries known in advance.

Expert Systems

Expert Systems is one such branch of study within this diverse area. To the uninitiated, an Expert System is no more than an algorithmic attempt to codify knowledge of a typically narrow and highly specialised field of study. This could be related to diagnosis of motor vehicle faults, automated monitoring of river pollution, weather prediction or some equally isolated subject.

One technique for the creation of Expert Systems and the knowledge they hold, known as knowledge bases, is through use of an application referred to as an Expert System Shell. This is a program which supports the construction, maintenance and interrogation of arbitrary Expert Systems using a fixed format for the representation of the knowledge base.

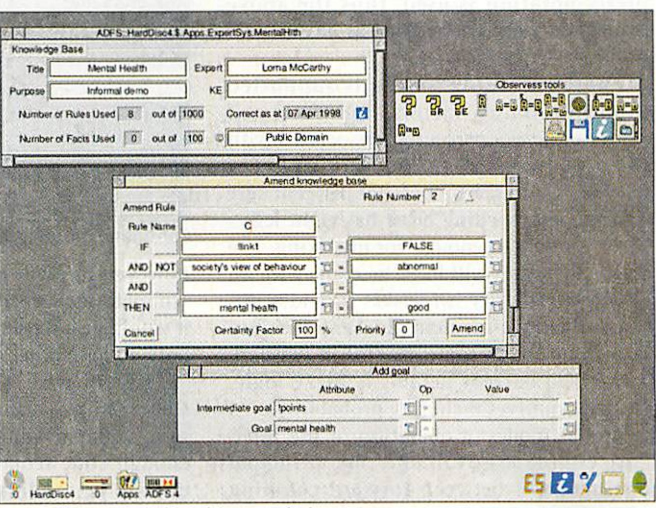
At its most elementary level, a knowledge base could consist of little more than a list of IF . . . THEN rules, also known as production rules, of the form:

IF [NOT] condition_attribute1 (< | = | >) condition_value1

[(AND | OR) condition_attribute2 (< | = | >) condition_value2]

THEN [NOT] conclusion_attribute (< | = | >) conclusion_value

where within the above notation "|" indicates a choice and [ ] mean their contents is optional.



Creating the mental health Knowledge Base

Thus

IF number_legs=8 AND covered_in_hair= TRUE

THEN action=run_away

is a valid production rule.

Although this might at first seem simplistic, with a large number of inter-related rules it is possible to codify much knowledge about the real world that we usually like to think of as belonging solely to the domain of mysterious conscious human beings.

Once knowledge about a certain domain has been codified, it requires a much less mysterious, and thankfully highly logical, piece of software to derive specific conclusions from the knowledge base given a particular initial collection of facts regarding the state of some of the attributes.

The piece of software that performs the logical analysis is known as the Inference Engine and the process of interrogation as a Consultation. Initial facts may be given to the knowledge base prior to consultation, or alternatively it can interact with the user as it progresses, requesting information if available as it encounters rules involving attributes of whose state it is not yet sure. This process continues until the value of a particular attribute, known as the goal, is determined.

Observess

In continual development for over five years now, with the first released version published back in October 1993, *Observess*, an expert system shell for Acorn's 32-bit computers, is now at version 2.81 – the name, *Observess*, is a contraction of the words *observe* and *expert system shell*. This is a substantial application, implementing ➤

the kind of shell as already described, with support for attributes of type float, integer, string and Boolean.

Production rules may contain up to three conditions and attribute values are allowed to be specified directly or as expressions involving such values, albeit of a reasonably simply format, so that, for instance, assignments such as next_year = this_year plus one are possible – in the program a prefix notation is used, thus the above expression would be written as next_year = (+ this_year 1).

Approximate reasoning is supported through certainty factors. Both facts and rules can have a percentage associated with them, known as their certainty. For instance we might be only 90 per cent sure that the approaching beast has eight legs – that's more than enough for my liking. The final conclusion will likewise come with an attached certainty. *Observess* provides different methods for manipulating certainty factors, although some are still in development. The current default is fuzzy logic, with alternatives including probabilistic.

Several modes of operation of the inference engine are available. The principal distinction is between forward chaining (data or event driven) and backward chaining (goal or hypothesis driven). Put simply, with the first the inference engine attempts to assign a value to the goal attribute, whereas in the second case it tries to prove the goal attribute has a given value.

Reasoning can be shallow or deep, monotonic or non-monotonic. The former indicates the order in which nested references between rules are scanned – either depth first or breadth first. The global order of rules can be changed, via a sort on rule name, certainty factor or priority – a value given to each rule when the knowledge base is constructed.

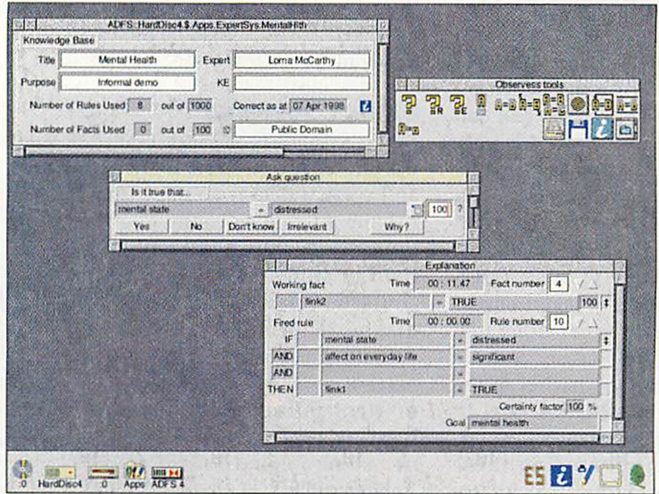
The consultation will either terminate after a single positive recommendation is given, or may be allowed to continue with, perhaps, further recommendations of greater certainty.

A last point worth noting is that in addition to being able to drive its functions via the usual GUI, *Observess* provides two alternatives. It has its own CLI-type interface which you might prefer, or it can even be driven from another application via the WIMP messaging system.

The package

What you get for your money is a reasonably comprehensive A4 manual and a single floppy disc, containing the supplied applications, most of which have been squashed to enable them to fit within the available 800K.

There's a collection of example knowledge bases, a tiny application to assist with repeated typing of a small number of phrases, called *TokenEase*, and two flavours of *Observess* – *Observess* and *ObserveRT*. With *Observess* you can create and run your own or other people's knowledge bases, however you will most likely want to disseminate such systems when complete and it would be a serious restriction if you could only do so to other owners of *Observess*.



Consulting the mental health Knowledge Base

This is why the run-time variant *ObserveRT* was created. It is a cut down version, with the editor code removed – only enough code remains to enable consultations to be conducted. It is shareware and can be distributed along with your knowledge bases, even, I believe, if you are selling such commercially.

Also, although not immediately visible but of great value, is the promised support. There is an e-mail and postal helpline, as well as a Web page. Furthermore, minor upgrades are available free of charge, with major ones costing only the difference in price between the two versions. Definitely a good deal.

The manual itself is a little hard on the eye. It uses a two column layout with relatively small and dense text for its 18 A4 pages. As to the content, it is pretty much adequate, though that is being a tad unfair as it does necessarily attempt many tasks at once. It needs to be both an introduction to expert systems, a user manual and a tutorial all rolled into one. Given this, it makes a good stab at it.

Creating a knowledge base

I spent a good 12 hours, spread over four days, getting to grips with *Observess*. Near the beginning I decided the only way to do a thorough review was to use it to build a reasonably complex knowledge base.

I set out to construct an expert system capable of enquiring about ones mental health – feelings, behaviour and so forth – ending with the simple conclusion as to whether it was bad or good. In the end I failed in my own goal, partly due to problems with *Observess* but equally as a result of limited time. I did however get far enough to feel qualified to write this review.

Having talked to a (relative) expert on the subject I made some written notes on the rules I would need, then proceeded to translate these into a form suitable for *Observess*. The screenshots show *Observess* during construction of this expert system and consultation of it. I found that there were quite a few minor bugs and inconsistencies, such as one which insisted two rules had been given the same name and stopped me from deleting any further rules – it turned out one of these two rules was itself a rule that had already been deleted!

These problems proved to be a pain, but not usually serious. However, when one is trying to climb a steep learning curve, one can well do without such features.

Conclusions

Observess is a troubled product. It has many faults arising, I suspect, from inadequate testing and feedback, due to its specialised nature, and coding which feels at times to be of a rather sloppy standard.

To be convinced of the claims it makes I would still like to see it distributed with at least one major third-party knowledge base of practical value in some field, not merely examples of tutorial complexity.

However, *Observess* has shown much improvement over the last few years, and its author, Rebecca Shalfield, has shown tremendous commitment to it by such long-term support and development which I am sure will continue, as will her eagerness to receive suggestions for improvements from users.

Currently *Observess* is probably at the point where it could prove practically useful, if you can put in the time to get to know it and work around its little foibles. Given that it is, as far as I know, the only expert system shell for Acorn machines, if you are interested in exploring this area I can tentatively recommend you take a closer look.

It is certainly the case that I am swayed in my decision by the availability of a free demo version, and the fact the earlier versions 1.xx have now been made shareware. I would suggest potential buyers get hold of these first. AU

Product details

Product:	Observess
Supplier:	Cherisha Software
Price:	£60 single user licence, £180 site licence, upgrades available
Address:	16 Woodside Drive, Wilmington, Dartford, Kent, DA2 7NG
Tel:	01322-553953
Fax:	01322-400883
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Re-release

Pandora's Box



Steve Mumford examines the re-release of Pandora's Box

The passage of time has an unpredictable effect on the mind and it's all too easy to feel nostalgic towards a computer game you remember playing years ago. It goes without saying that the games publishers out there have been quick to cash in on this emotion – rebox it, drop the price and sell the game to those who missed it the first time around. Here in the Acorn world, Fourth Dimension are promoting what they call their *Value for Money* range – a selection of games both old and new for the sum of £9.99 each. One of the titles re-released in the scheme is *Pandora's Box*.

Let me jog your memory for a moment –

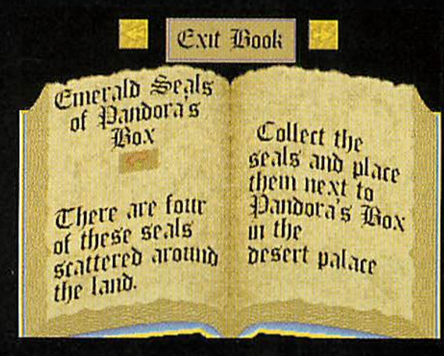


this isometric adventure game followed the fortunes of Merlin the Sorcerer on his quest to seek out and seal Pandora's Box, the vessel that contained the evils of the world. Cracked open by a coven of dark mages, the forces within are being manipulated to spread fear and despair over the land and Merlin alone has the power to close the four seals and banish the spirits once more. Unfortunately, there's one small problem – the seals themselves have been scattered far and wide and it doesn't look like the hero of the tale is going to get much help in finding them.

Thinking back to my first experiences of *Pandora's Box*, I recall I was surprised by the depth of the gameplay and the diversity of the scenery. Alongside the staple ingredients of the isometric platformer, including collapsing floorboards and inconvenient barrels of explosive, *Pandora* enabled you to build up a sizeable weapons arsenal and create your own potent spells. Boasting locations from town to castle and marsh to desert, the game even allowed you to take a short trip on a river, although steering the boat was a tricky operation. The difficulty level was carefully tuned to allow steady progress while making sure no bite was lost.

Playing the game once more, I see things in a similar light - although the command interface seems a bit clumsy by today's standards and the graphics aren't as pretty as those of *Little Big Adventure*, it's still great fun to play and can offer a tough challenge. The budget re-releasing of old games can either be seen as a generous gesture or a sly method of making quick cash; in this case, I think the Fourth Dimension are doing us a service.

The program has been tweaked to allow it to run on the newer Acorn machines, including StrongARM-enabled, but one or two problems remain – there's no easy way of leaving the game short of resetting the machine, and attempting to turn off the sound-effects using the F3 key resulted in an unexpectedly severe crash.



The original packaging has been altered for the re-release and instead of supplying the game in a plastic library case, the discs and manuals are popped into a resealable bag. Other than the above, this re-release is identical to the original, although installing and playing it from a hard disc makes for a much more fluid experience. I have to say I was half-hoping to see an updated manual or some extra support material that might add an extra hint of authenticity (a map of Merlin's hometown, perhaps, or a couple of pages from a lost spell-book), but I'm afraid that was not to be.

If you've never heard of *Pandora's Box*, I recommend you take a look – there's a lot of gameplay in there for £10. There's no denying that the title is old, but it has lost little of its charm since the original release. There's one thing that does strike me, however – Acorn's computers have come a long way since *Pandora's Box* was in its infancy and perhaps it's time for someone out there to push back the boundaries once again.

High-resolution graphics are an absolute must in this day and age and the increased storage space available on hard discs and CD-ROMs means that a wider selection of art

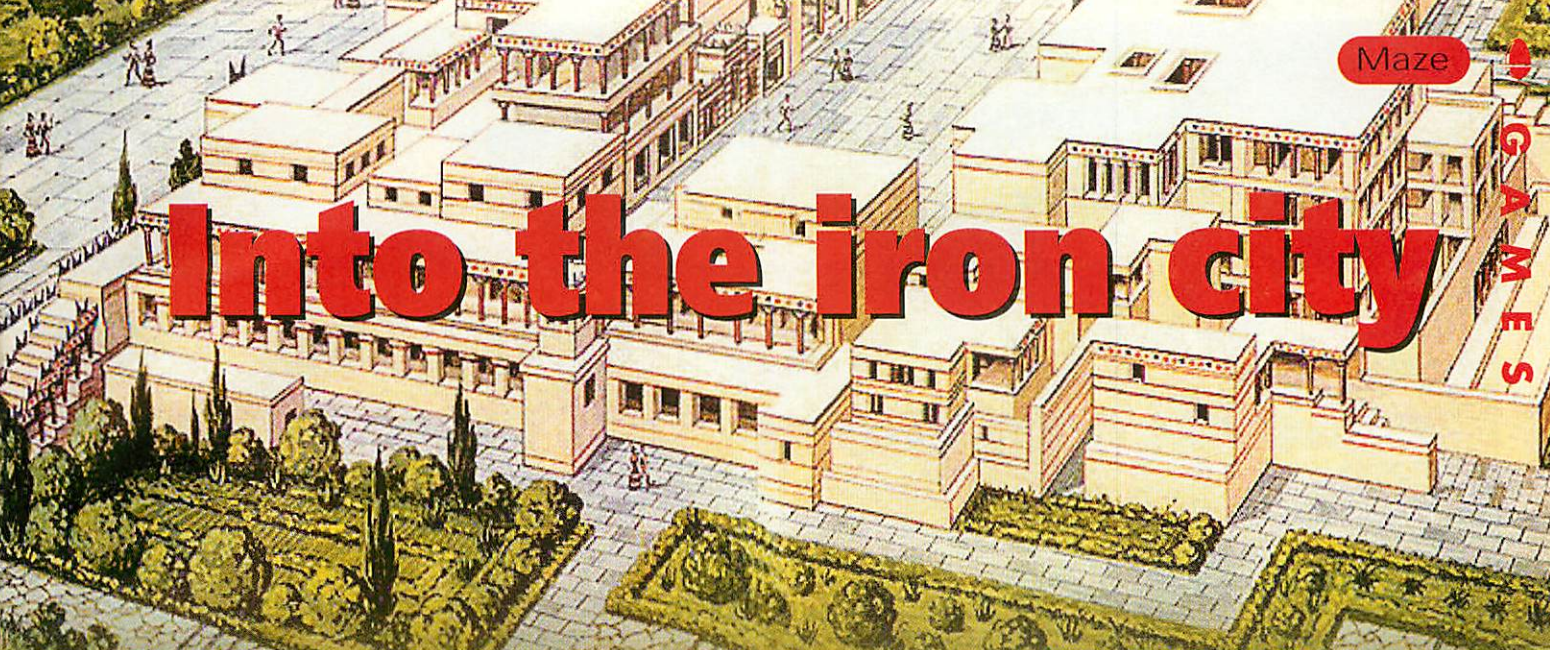


could be used, allowing every building on the island to have its own unique feel. With the extra computational horsepower that's commonly available, the game engine could be extended to make movement less wooden, the puzzles could be made more intricate and Merlin could be granted extra powers.

The one problem with digging out and dusting off old games is that once you've started, it can be hard to stop. Having been drawn into *Pandora's Box* once again, I've got an irresistible urge to find my copy of *Cataclysm* and tackle level 40 once again – now, there's a game that deserves a facelift. Is there anyone out there who wants to take on the challenge?

Product details

Product:	Pandora's Box
Price:	£9.99
Supplier:	Fourth Dimension
Address:	PO Box 4444, Port St Mary, Isle of Man, IM99 7RS
Tel:	01624 836744
Fax:	01624 836745
E-mail:	4D@rsenter.demon.co.uk



Into the iron city

Graham Nelson on the art of the maze

In what Catullus calls 'the iron city of the iron king', Knossos in Crete, the tyrannical half-bull Minos lives at the centre of a labyrinth. Theseus must not only kill the monster, but also find his way, which he does by playing out a thread from whatever passed for a pull-over in the late Bronze Age.

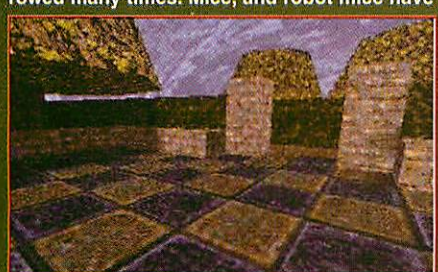
By the time the myth was written down, Catullus and other authors knew perfectly well that the 'labyrinth' had been only a palace, beyond the comprehension of visiting Greeks who had never seen a building of any size before. It was destroyed by fire, around 1400 BC and lay under the soil for three and a half thousand years. When Sir Arthur Evans excavated it, the Minotaur's maze was still so famous that he named the whole culture 'Minoan' after it.

Medieval mazes are stranger still: Pathways of tile or brick symbolising the Earthly world through which pilgrims walk toward God. A beautiful design on the floor of Chartres cathedral is now harder to tread since (a) you feel ridiculous and (b) it's often covered with chairs. And still it seems to hold an enigma, regularly 'explained' in mad books about pyramids, UFOs and the Knights Templar.

The deliberate puzzle begins with English yew-hedge mazes, of which there are about a hundred. Many are 19th Century or present-day – Leeds Castle maze dates from 1988 – and the origin of the idea is obscure. Rosamund's Bower, planted at Woodstock as a venue for Henry II to visit his mistress – and which Queen Eleanor, like Theseus, supposedly found her way into, and killed her rival – may be more legend than fact. The classic has to be the maze at Hampton Court, planted in 1689 for William of Orange.

Keys and designs

The Hampton Court layout has been borrowed many times. Mice, and robot mice have run around models of it. It has even been 'ported' to a *Quake* level, along with other classic labyrinths, such as the monastery Library in Umberto Eco's novel *The Name of the Rose* (see the Museum of Ancient and Modern Art at http://www.planetquake.com/mama/).



Advent

Maze Score: 36 Moves: 24

At West End of Long Hall

>

Maze
You are in a maze of twisty little passages, all different.

>

Maze
You are in a little twisty maze of passages, all different.

>

Maze
You are in a little maze of twisty passages, all different.

>

Maze
You are in a twisting little maze of passages, all different.

>

Mazes abound in early computer games, partly because they were easy to encode in small amounts of memory. Using a pseudo-random number generator, an almost infinite maze can be stored in almost no memory at all. In BASIC, for example, the potential exits for the room at position (X, Y) in a 1000 by 1000 grid could be worked out by seeding the random number generator with RND(-(1001*Y + X)), then declaring that a north exit exists if RND(2) = 1, and so on around the compass points. You get a poor sort of maze as a result, because there's no logic or key to the design, but tweaking the algorithm can still make something passable.

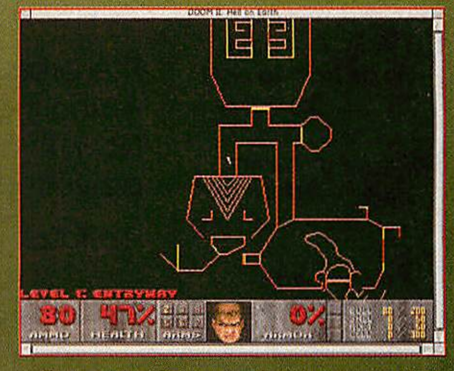


A truly satisfying maze needs an organising principle, a key. Umberto Eco's labyrinth hangs on the continents and Biblical references. At Leeds Castle, passages form outlines of the traditional heraldic symbols of the house. Nowhere is the need for an underlying idea more important than in the maze puzzles of text adventure games.

In the same way that detective-writers are always looking for a new solution to the locked-room mystery, adventure-game designers need fresh solutions to the maze puzzle. Briefly, you find yourself in a morass of rooms which seem identical, with exits in all directions: in two or three moves you're hopelessly lost. How to get out? What is concealed within?

The standard solution is to drop items behind you, in order to tell where you've been – a trail of souvenirs not unlike Theseus's thread. But this is exhausting and dull for the player, so a cunning designer will try both to frustrate this method and to provide another.

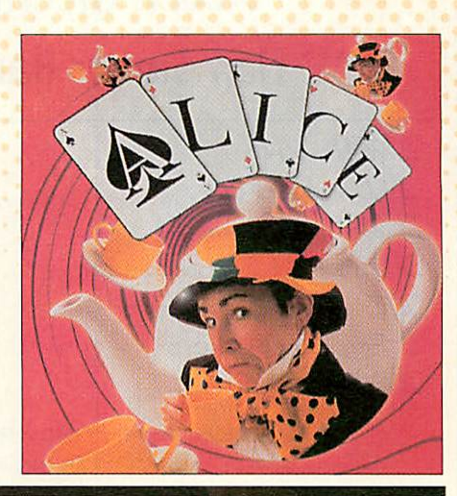
In *Zork*, a thief wanders the maze with you, every so often picking up anything you've left unguarded. In the BBC Micro game *Castle of Riddles*, the maze contains fluorescent 'this way' arrows, only visible in darkness. Infocom's *Sorcerer* contains a maze of glass best explored with the aid of sonar, by transforming into a bat. My own *Curses* has a garden-maze which is insoluble, unless altered by going back in time to the early 1800s and interfering with its planting.



The maze is powerful because it is constructed around a secret, because anyone can enter and try it, because it has the mystique of lost worlds and all they may contain. It seems mad to imagine that if our civilisation collapsed tomorrow, garbled legends would remember only the corridors of, say, the Vehicle Licensing Centre in Swansea. But King Minos might have said much the same.



Out of the looking glass



Lewis Carroll might well turn in his grave, but then perhaps not. The Graeae Theatre Company are doing a production called *Alice*. It's designed for primary-aged children and this time Alice hasn't got lost down a rabbit hole or through a looking glass, but in a computer. It opens at London's Drill Hall (0171-637 8270) this summer where you'll see Mister Bunny who can't get his word-processor working – the cat having eaten his mouse – and Alice, being a computer whiz, offering to help and finding herself in the world of Wondercompute.

Here the Duchess thinks she's a princess, but is really a printer and her baby laptop wants to be a pig while the Mad Hatter is fascinated by sound cards and the Queen wants to wipe everyone off the hard disc. Can Alice get back to the Exit or will she be deleted?

Housework

House and Households is a new bi-lingual Welsh and English disc for Key Stage 2 History. Commissioned by ACCAC and the National Museums and Galleries of Wales, the disc uses detailed reconstructions of the real properties on display in the museum and coincides with the museum's 50th anniversary.

You are a traveller in Cantre'r Gwaelod, a mythical country of 16 cities that was flooded by the sea due to the neglect of its watchman, Seithenin. It's with the now repentant watchman as your guide that you explore through time, lifestyle and architecture. Beginning with the hunter gatherers, you journey through 13 periods from Celts, Vikings and Industrial Revolution to the present day.

In the different houses you'll find information and examples of folklore and superstitions, the change in building styles inside and out, regional peculiarities and materials. There's also information on the people who would live in such houses, what they'd eat, their families and how they lived through the decline of iron-working in Merthyr, the change in women's status, the development of farming methods and so on. If you can't visit the museum this could well be the next best thing for £40. For more details contact Anglia Multimedia on 01268 755811 or visit the website at http://www.anglia.co.uk

Manchester's Baby

June will mark the start of a four-month celebration of the birth of the computer, called Digital Summer '98 (0161-832 1666) which will be the excuse for a summer-long series of exhibitions, concerts, educational, visual and performing arts projects, on-street displays and special events in Manchester.

Demonstrating the impact the computer has had on science and on everyday life, the celebrations start with a one-day musical festival but the high point will be on 21 June when – 50 years to the day – a rebuilt *Baby* will run its first program all over again.

That's the way to do it

BECTa (previously known as NCET) have produced some guidance for school budget holders called *Connection Schools, Networking People*.

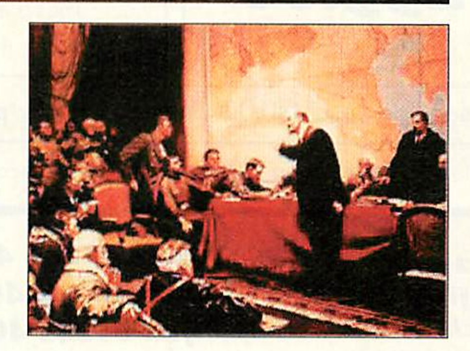
Based on the findings from over 1000 schools involved in the DfEE's Superhighway initiative among other projects, this gives advice on planning, purchasing and good practice when it comes to ICT (previously known as IT).

Why read it? Well, £100m will go to schools this year to connect them to the National Grid for Learning. You can get a copy for DfEE Publications on 0845 6022260 or via the Virtual Teacher's Centre at http://vtc.ngfl.gov.uk

Picture this

If you're stuck for resources on a topic then AVP's *PictureBase* series could well save the day. This is an integrated series of 23 CD-ROMs on a host of topics, the latest releases covering *Materials, Physical Processes, Minerals and Fossils, The Twentieth Century World* and *London Docklands*.

AVP (01291 625439) have just released a *PictureBase Author* which lets you make your own CD-ROMs. If you want to know more, their website – www.avp.co.uk – is a good starting place especially as you can download the latest version of *PictureBase* for free. This version has direct Internet access allowing your notepad to be exported along with your customised trails.



Updated

Since being reviewed in the June issue, *Calendar* has been tweaked and now when putting days of the week, months or seasons in order, the first one is inserted automatically. You can also choose whether you want a week to start on Sunday or Monday. The upgrade is available to anyone who has purchased the program by e-mail or by sending a stamped addressed envelope and a floppy disc to: RH Consulting, 2 Halifax Road, Southport PR8 3JU. Tel: 01704 573210 or e-mail: rhemmings@argonet.co.uk

Contacting me

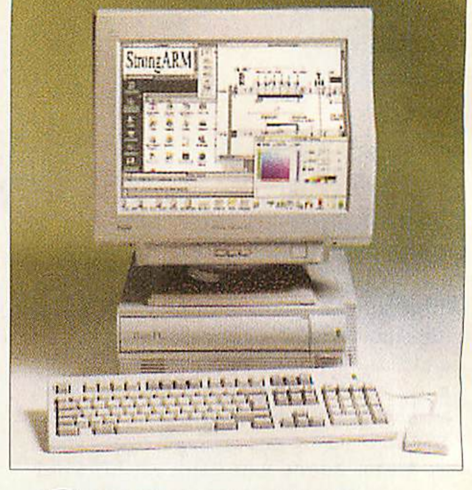
You can contact the Education page by writing to me, Pam Turnbull at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or e-mail: aueduc@idg.co.uk

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Where do you want to be today?

Good websites are not as easy to find as you might think. **Pam Turnbull** looks at some of the best with a particularly *educational* bent

Caistor

http://www.sys.uea.ac.uk/Research/researchareas/JWMP/CaistorRomanTown/caistormap.html

Otherwise known as *Norfolk's forgotten town,* Caistor St Edmund was once Norfolk's capital. With high walls, this large bustling market town was the centre of local government, trade and entertainment. Caistor is one of only a few Roman towns in Britain that have not been damaged or hidden by later buildings.

A general site map shows the wealth of Roman remains that have been found in and around the town. Fortunately the lower parts of the buildings and town wall were left untouched, with much of the rich archaeological evidence safely preserved below ground. Click around the map to reveal information and graphics.

Children's literature Web guide

http://www.acs.ucalgary.ca/~dkbrown/index.html

This is an attempt to gather and categorise the growing number of Internet resources related to books for children and young adults with information on authors, stories you can find on the Web and a *Reader's Theatre.* In addition there is a list of book awards, plus information about movies based on children's books. Add teaching ideas and resources for teachers, parents, storytellers, writers and illustrations with research guides and lists of relevant organisations and publishers and this is pretty well comprehensive.

Educational space simulations project

http://chico.rice.edu/armadillo/Simulations/simserver.html

One of the thrills of the Internet is that distance doesn't matter. This has never been more true than here, where a variety of schools in the US (and elsewhere) have recreated space shuttles, followed along with the Mars exploration and NASA. This site is full of information on how to create your launch scripts, get good meteorological information, as well as opportunities to talk to schools doing the same work all over the world.

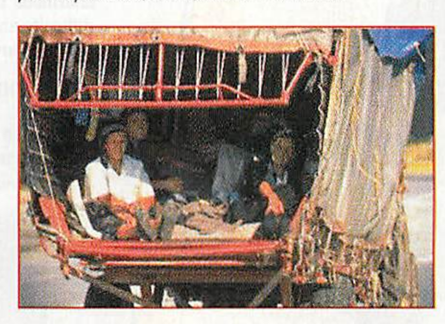
Egyptian links

http://www.eaglenet.com/amelia/EGYPTOL.HTM

This is a detailed site with a large selection of links on everything from papyrology to pyramids. As well as letting you keep up-to-date on the latest news and gossip there are links to archaeologist's own websites, information on the history of archaeology, ancient technology and languages. There are full reports, *QuickTime* video and graphics of expeditions to Dashur and another documenting a dig underway in Wadi Natrun. There's also mapping, virtual tours and ancient Egyptian love poems, a digital encyclopedia focusing on the Greek and Roman classical world to only touch the surface.

Faces of sorrow

http://www.i3tele.com/photoperspectives/facesofsorrow/html/exhibition.html



A photographic history of years of war in what was Yugoslavia. There are photos from 35 photo journalists from 14 countries. Sponsored by *Time* magazine in co-operation with the United Nations, this



site is divided into six sections including Ethnic Cleansing, the Siege of Sarajevo and Faces of Rape. There is also a history of the conflict and the Dayton Peace Accord.

France à la Carte

http://www.francealacarte.org.uk

This is an online resource centre for KS1 to A Level with information for teachers or those just interested in the country, people and culture. It's all in French and there is a search engine and a section on the World Cup if you're interested.

The main body gives you information on the famous – such as Emille Zola, the historic – such as the Declaration of Human Rights, an adventure in three languages, poems, schools as well as sections on media, education, art, language and science. At the moment this is of most use to KS3/4 students, though coming soon – for 5-8 years – are songs, nursery rhymes and stories. There are even radio plays and detective short stories written by nursery and primary school children. For older children there is the local newspaper from a school in Grenoble, moving on to literature with discussions in French and English, while for A Level students and above there is teaching and professional support to French assistants through teaching guides.

The Exploratorium

http://www.exploratorium.edu

Build your own *Glitter Globe,* discover the science of cycling, visit online exhibits, Web cams, find images, sounds or join the expedition to see the solar eclipse, follow the step-by-step hints and tips on dissecting a cow's eye, find out about light and shadows in the Exploratorium – a museum of science, art and human perception with over 500 interactive *hands on* exhibits and experiments. There are lots of ideas and things to do in class and out.

The Victorian Web

http://www.stg.brown.edu/projects/hypertext/landow/victorian/victov.html

Access information on society, economics, religion, philosophy, literature, arts, science, technology, politics and gender. In fact, everything that happened in 19th Century Britain from Chartism to the Halevy thesis on why the English never revolted. Good design and links to other related sites.

Volcano World

http://volcano.und.nodak.edu/



Everything you want to know about volcanoes is here, from information, pictures, games, virtual experiments, lesson plans, movies and *volcano of the week* to an A-Z list of major points of interest on this site. A nice touch is the *What's New* section which lists recent additions to the site which you may otherwise miss out on on. When it comes to pictures, click on a region – using the map or name of the region, you're then presented with a country by country listing of volcanoes in that area from Nisyros in Greece to the Urgup Basin in Turkey for instance.

There is also information about links on plate tectonics, currently erupting volcanoes, off-world volcanoes, a glossary, parks and monuments, observatories and video clips. You can even e-mail questions for the experts to answer or ask to be e-mailed when a volcano is about to erupt.

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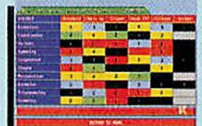
The wide range of enjoyable and stimulating challenges together with a mass of carefully graded educational content ensures that anyone can improve their mathematical skills and knowledge.

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Multiplication facts up to 5 x 5
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Relate equiv. fractions to decimals
Estimation to check order (size)
Subtraction facts up to 20
Multiplication facts up to 10 x 10
Mental addition of two 2-digit No's
Div. of 2-digit No's by single digits
Equivalence of fractions (and ratios)
Convert fractions to percentages
Subtraction facts up to 10
Addition facts up to 20
Mult. - single-digit powers of 10
Division of single-digit powers of 10
Percentage changes
Convert fractions to decimals
Decimal notation with money
The 2, 5 & 10 times tables
Mental subtraction of two 2-digit No's
Mental addition of single-digit No's
Estimate mult. and div. of whole No's
Ment. div. - multiples of powers of 10
The difference between numbers
Use a wider range of metric units
Calculate fractions of quantities
Multiplication and division problems
Memory and brackets on calculator
Standard form (integral powers of 10)
Add & subtract problems inc. money
Estimates based on familiar units
Using multiplication and division
Imperial units in daily use
Index notation
Four rules of fractions

DiSC2 – Algebra
Inverse ops. in a simple context
Co-ordinates in the first quadrant
Co-ordinates in all four quadrants
Plot simple mappings
Simple inequalities
Locate regions by inequalities
Number patterns up to 10
Simple function machines
Explore the properties of numbers
Simple formulae expressed in words
Explore number patterns (mappings)
Linear and other inequalities
Odd and even numbers
Mult. and div. as inverse operations
Co-ordinates in all four quadrants
Simultaneous equations
Interpret graphs of form $y=mx+c$
The shape of graphs
Symbols in place of numbers
Whole Nos. divisible by 2, 5 or 10
Terms like square, multiple, factor
Terms like prime, cube, square root
Solve linear equations
Manipulate algebraic equations
Repeating patterns in objects
Explain number patterns
Add to sequences
Patterns in equivalent fractions
The rules of sequences
Using indices
Simple number patterns
Simple equations expressed in words
Sequences/Interpreting instructions
Express simple functions in symbols
Solve simple inequalities
Use and rearrange functions

DiSC3 – Geometry
Angle as a measurement of turn
Compass directions
Points on graphs (first quadrant)
Points on graphs (all quadrants)
Using bearings to define directions
Vector notation
Conservation of measures
Reflective symmetry in 2-D shapes
Reflecting shapes in a mirror line
The congruence of simple shapes
Enlarging - integral scale factors
Enlarging - fractional scale factors
Turning through right angles
Sorting 2-D and 3-D shapes
Areas by counting squares
Volumes by counting cubes
The symmetry of various shapes
Classify formulae
Construct 2D and 3D shapes
Language associated with angle
Measure and draw angles
Using networks to solve problems
Types of quadrilateral
The locus of a moving object
Perimeters of simple shapes
Appropriate formulae to find areas
Areas of circles using a formulae
Pythagoras' theorem
Calculations on plain & solid shapes
Sine, cosine and tangent
Recognise 2-D and 3-D shapes
Recognise rotational symmetry
Intersecting and parallel lines
Volumes of simple solids
Properties of polygons
Mathematical similarity

DiSC4 – Statistics
Construct block graphs
Construct and interpret pictograms
Construct bar-line and line graphs
Construct frequency diagrams
Draw frequency polygons
Construct histograms
Record using objects
Record using events
Collect, group and order data
Different outcomes from repetition
Record grouped data
Relative frequency in probability
Outcomes of random events
Place events in order of likelihood
The median and mode
Subjective estimates of probabilities
Distinguish estimates of probabilities
Probabilities for exclusive events
Sort a set of objects
Appropriate words to identify chance
Mean and range
Probability of equally likely events
Probability of a combined event
Probability of two events happening
Criteria to classify objects
Uncertain/certain/impossible events
Understand the idea of evens
Fair and unfair events
$P(E)+P(\text{not }E)=1$ and $P(\text{not }E)=1-P(E)$
Calculate the mean
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City slickers

How do you make cell function funky? Anglia Multimedia have taken a different approach. Pam Turnbull reports

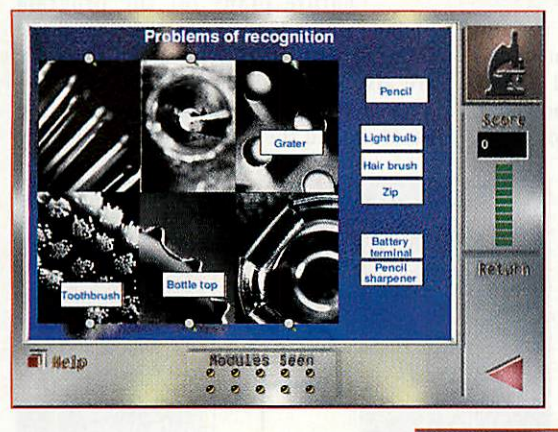
There is a central premise behind this program and that is that cells are organised and function just like a modern city. Following the analogy through means that you have places which generate energy, manufacture things, dispose of waste, communicate with others in the city, move things around and so on. Developed with the Institute of Food Research and the John Innes Centre, it is based on the Cell City lecture.

The program divides into three main sections: An introduction on how to use the program, the basics about what a cell is (letting you zoom in on a potato up to x550) and an explanation of the concept of a walled city – taken much further in the Slideshow section on the main menu – so that you can understand the program's basic analogy. Then there is Start Microscope.



This presents you with a virtual electron microscope exploration of a cell. A video introduction sets the scene and then it's all yours. Move around with the on-screen arrows – remember to move as if it was a microscope and not a computer game or you'll end up going backwards – and watch the module LEDs, one of these will light when you move the crosshairs over an important bit.

Find something and click to zoom in on the nucleus/city hall to find out just what the cell manager does or the power station and so on. A video tutorial is helped along by animation and examples and then it's up to you to access a three-page summary or zoom out and be presented with one of six questions. Zoom further in and you have more sections to explore. For instance, in the Factory/Ribosomes there are sections on proteins and amino acids containing further information and puzzles. These all add to your score (if you get them right). You have to visit everything, even the *did you know?* sections to light up the module LED. There are nine modules here from the plasma membrane or city wall, to cell replication or life and death.





Hidden in the *Introduction* is the tenth module on microscopes which covers how optical, scanning electron, transmission electron and atomic force microscopes work, their place in history, resolving power, ideas of scale and problems of recognition.

A nice extra is a Resource Bank of images, glossary and worksheets, while the manual provides a useful guide to the program supplementing the on-screen help, plus some 10 activity sheets.

The city analogy works, though sometimes it's a little strained and the manual does note where the metaphor breaks down completely. There is a good mixture of video, animation, text and activities within the virtual microscope section but it somehow didn't manage to enthuse, which is partly down to one of the presenters whose style is a little too slow and dry for this age group and for the style of the package.

Furthermore, though the activities are nicely integrated there is no feedback if you're getting it wrong. The help screen is pretty much useless as once you're in it you can't get back to the page you wanted help on in the first place, though it does give you access to the glossary. In others places the layout needs work as you have to put pictures in order but can't see where as they cover up the answer boxes. This is a great shame as a lot of thought has gone into the content and design. Despite these niggles, however, it will make a good additional tool for the classroom teacher.

Product details

Product:	Cell City
Ages:	14-16
Price:	£50 (including site licence)
Publisher:	Anglia Multimedia
Tel:	01268 755811
Web:	http://www. anglia.co.uk

Reviews

EDUCATION

And your specialist subject is...

Pam Turnbull looks at a new program which will let anyone become Magnus Magnusson

This is a slightly different outing for Xavier with a program which lets you create multiple choice quizzes, including sound and graphics. It started out as something for teachers to produce quizzes on National Curriculum topics in a more fun way than usual, but *QuizMaster* can also be used in other areas from driving tests to memory training and even presentations.

Three programs come with the program – *QMHelp* which gives advice in the form of HTML files with graphics and sounds to help you create your first quiz, *QuizMaker* for creating your own tests and *QuizMaster* for loading and running quizzes.

Once it's installed onto your hard disc, the best thing to do is load and run some of the demo quizzes. *QuizMaster* doesn't have the prettiest or most self-explanatory screen in the world – it provides a window for File setup and Game setup. Into the former you drag the questions which have been created and choose whether you want to have a report on the performance.

Next comes the Game setup where you can choose between a basic or studio quiz for one or more players. You can have up to four players each using different parts of the keyboard for their responses and you can change the keys to suit. Here you also set whether you want questions and/or answers spoken (in synthesised speech) and set the number of questions you want run, say 10 out of 50 – using zero runs the full list.

When it comes to wrong answers, *ignore* means the quiz just lets you carry on guessing until you find the right answer, *lockout* means the program ignores you for one second, while *knockout* gives you only one chance at getting the right answer. The Studio Quiz has an optional timer element and if you have a concept keyboard Xavier thought of that too. Set all these and you're ready to press play. The quiz screens themselves are great – good graphics, nice sound-effects and you don't have to do a thing but play.

When you've exhausted the pre-prepared quizzes it's time to make your own. Naturally dubious of anything that claims to be easy, I decided to create a quiz on weather using clip-art from APDL's Educational Resources CD-ROM. Now you can do this in *!Edit*, but *QuizMaker* makes it easier.

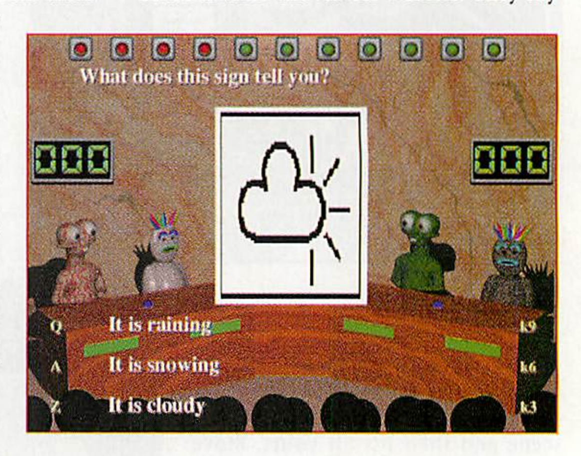
A tutorial guides you through a simple question and then a more complex one and this is well worth following as there are some neat tricks to be picked up. Fill in the form stage by stage and the program will save all the questions, graphics and sounds into one directory.

You can add any sprite which will be scaled to fit if it isn't the required 320x240 256 colour mode – while drawfiles too can just be dropped in though will again be scaled to 9x6.8cm. Sounds at present must be in *Armadeus* format. *Replay* and *ArtWorks* support will be available by the time you read this, other graphics formats need a quick trip through *ChangeFSI*.

Add a question at a time and decide whether you want to have graphics, sounds or whether you prefer to have a pause before the answers and/or graphics are shown – this is measured in seconds. You can edit questions as many times as you want and try them out in the *QuizMaster* to see how they look. Sounds or graphics can be removed by simply double-clicking on them.

You can also opt to clear the screen before the questions and after the graphic is shown – good for memory tests. Other parts of the Question Maker let you show messages before the question which could be a heading for a new section – and if you don't put in any answers you've got a presentation.

Future plans for the program include pulling source material from the Internet with JPEG/Wav support. Xavier are also working on a network version (LAN or WAN) and a quiz-swapping scheme based around the Xavier website. They say they have no plans for a pub-style version.



And the bottom line? *QuizMaster* seems quite complicated at first, but it isn't especially if you take it one step at a time and soon you'll be zipping through it. Digitised speech and a better-looking *QuizMaster* setup screen would give it wider appeal however.

Product details

Product:	QuizMaster
Ages:	11+
Price:	£45.23 (inc VAT and a site licence)
Publisher:	Xavier Educational Software
Tel:	01248 382616
Web:	http://xavier.bangor.ac.uk/

Although *Karelia2* is a new application, it has already seen the light of day in a previous incarnation as support program to the PowerWave Sound expansion card. Written by the same team, it bears a lot of similarities with its predecessor and anyone familiar with the former will feel instantly at home with the various windows and controls. Its name, with potential for confusion, comes from the Karelia Suite (Opus 11) written by Sibelius. Not a lot of people know that.

It's a MIDI file player designed especially to provide extensive control over Yamaha's superset of General MIDI called XG. Of course, if you are going to get the most out of the program, you will have to use a MIDI instrument that supports XG and one such device is the Audio Dynamics DMI card fitted with an XG synthesiser.

Like most RISC OS applications *Karelia2* is a small and perfectly formed piece of code that would easily fit on the back of a postage stamp. Setting it up on your computer is just a matter of copying it across to your hard drive and running it. There's no need to install any extra modules because *Karelia2* assumes that you already have a MIDI interface with the relevant driver software.

Rather annoyingly, if you don't (have a MIDI interface that is), *Karelia2* just throws up an error stating that it can't find a particular SWI call – please make sure it gets sorted out in version 3 Q-Tec. Once you have an instrument connected via MIDI, *Karelia2* can be started.

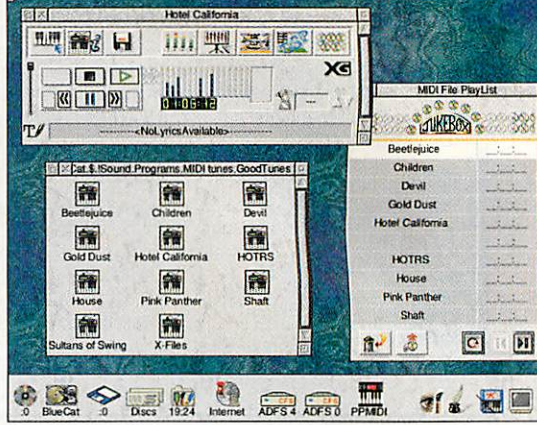
A single icon appears on the iconbar from which it's possible to access the main menu, plus configure various settings and/or switch on the MIDI Thru function. The version of software tested here was 2.0 but is likely to have changed by the time you read this. There are numerous mentions of upgrades in the manual so it's worth contacting Q-Tec to check for any enhancements.

Clicking on the *Karelia2* icon brings up the main window from which all other parts of the program can be accessed via various icons. It also contains standard tape-deck controls for playing songs, a slider to alter the song's volume, plus a level meter that displays current channel activity. Finally, there's a tempo control for changing the speed of a song, an elapsed time display that shows how much of a song has played in (at 100th of a second accuracy), plus a small text window for displaying song lyrics where applicable.

On it's own, *Karelia2* is not much use but fortunately Q-Tec supply a small collection of sample MIDI files with the program to try out the various features. Dragging a MIDI file to *Karelia's* main window loads and plays it. The time elapsed counter starts and as long as there's something on one or more of the channels, the channel meter springs into life. In addition, up to nine songs can be added to a play-list using the JukeBox window and played in order or even looped until you've had enough...

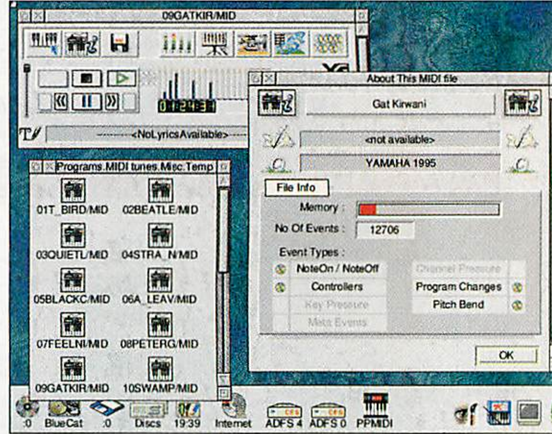
Taking control

As well as making it possible to listen to MIDI files, *Karelia2* allows the user to change various parameters in real time as the song is playing. At the simplest level, these could be just the volume or the stereo position of a particular track. If you make use of the XG features however, you also have access to all sorts of extra sounds as well as a number of real-time DSP effects.



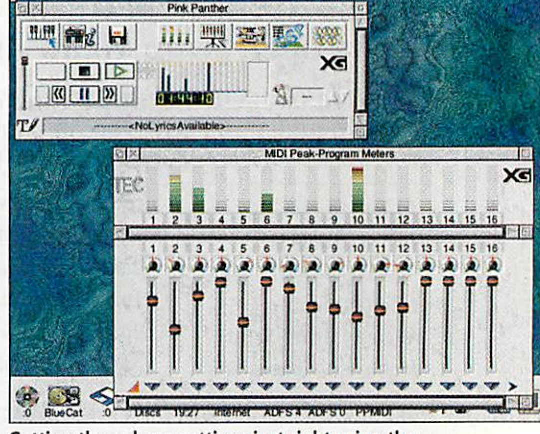
The main Karelia2 window with a selection of songs loaded in the JukeBox

The Performance window is the main window in *Karelia2* and provides control over things such as volume and stereo position. When you first open the window, these are the only controls shown but a click on the 'Expand window' icon reveals further controllers including Expression, Pedal and Soft Pedal.



Everything you wanted to know about a MIDI file but were too afraid to ask ...

Sliders give quick and easy control over the volume setting while knobs are provided to move the stereo position from left to right (or anywhere in between). Slider



Getting the volume settings just right using the Performance and Meter windows

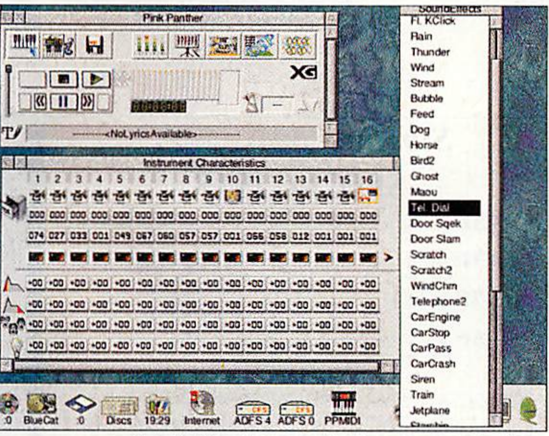


Power music

Rob Miller explores a new MIDI player

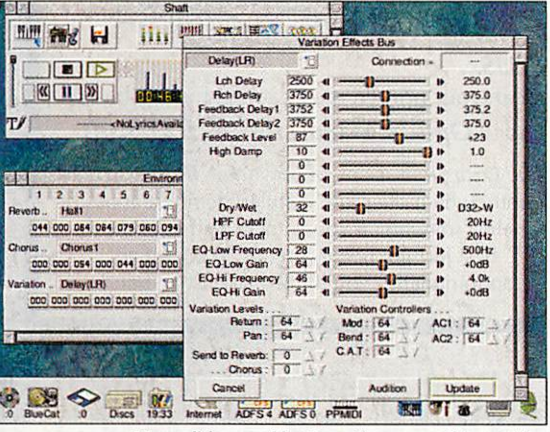
controls are also used to change the amount of Expression although in this case they pop up in a separate window whenever you click on a particular channel.

While all three methods work OK, I would prefer a more uniform approach and have the same type of controller for each. Even better would be to have customisable controllers or different types of controllers that users could assign themselves. This would obviously be a lot of work for the programmers but I think it would increase the usability dramatically.



Karelia2's rather complex instrument selection window

Pedal and Soft Pedal controllers have just two states so have simple on/off switches for each channel. As in a lot of *Karelia2*, custom icons are used instead of the 'standard' RISC OS ones although one could criticise the programmers for this, it does give the program a bit more character.



More sliders and buttons than something with a lot of sliders and buttons on

Instrumental

Because an XG device has access to so many different sounds, accessing them can be a little complicated. *Karelia2* uses a similar-sized window to the Performance window with the channels arranged from 1 to 16 along the top and the various settings down the side.

Instruments can be one of four types namely an instrument (such as a flute), a drum kit, a sound-effect or a sound-effect kit. Individual instruments (or variations on an instrument) can then be selected depending on the type of instrument chosen. This might sound complicated at first but after a bit of experimentation it doesn't take long to get used to. If, for example, you choose a sound-effect as your type of instrument, you then have the choice of 49 different noises including wind, rain and laughing.

The numerical way in which chosen instruments are depicted is fine if you can remember what number each sound is but I would have preferred at least a text string stating the current selection.

The lower half of the Instrument window contains four further rows of controllers, each of which is XG specific. These effect the Attack Time, Release Time, Harmonic Content and Brightness of a sound. All work in a similar way to the Expression controllers in the Performance window (see above) and likewise share the pros and cons.

Environmentally sound?

Perhaps the most complicated window of the lot is the Environment window which is used to select and/or change the various DSP effects available with XG. These are divided into three groups; Reverb, Chorus and Variation, with each group subdivided into similar types of effect. Reverb, for example, offers different effects to make a noise sound like it's being played in a hall, in a room or on a stage.

Each channel can be assigned its own effect and each effect can be customised via another control window containing all manner of buttons and sliders. Without going into too much depth here (even the manual claims that 'It's impossible to go through each parameter individually') suffice to say that it is possible to get the effect you want through trial and error.

Unfortunately, because sound dynamics are so complex, you really need to know quite a bit about how the way sound behaves in order to get the most out of the DSP effects section.

Even after hours of knob-twiddling and slider-sliding, I still couldn't get quite the result I wanted. This isn't due to a shortfall in *Karelia2's* design but is just because of the nature of the beast. Perhaps some means of loading pre-designed configurations would help here?

Sound advice?

Overall I found *Karelia2* a useful program. If you just want to play back MIDI files there are plenty of PD programs that will do the job, but if you want to start messing around with the inner workings of songs, then it's probably the program you're looking for. Don't forget though, unless you have an XG-compatible sound module, you're not going to get the most out of it.

It does have a few things I wasn't too keen on, the fiddly way of controlling parameters using sliders for example, but it's doing a passable job of what is a tricky task. With a little redesign in the front end, and a bit more uniformity between windows, it would virtually be a 'must buy'. That is, if you had the right hardware of course. The manual mentions *Karelia3* a few times so hopefully it won't be too long until I might get my wishes granted. AU

What is XG?

XG is a standard designed by Yamaha that provides a number of extra voices to those already present in the normal General MIDI (GM for short) set. These are mostly variations on the GM voices – like two alternative Church Organ sounds – but there also a whole host of extra sounds, there are 49 extra sound-effects.

XG also gives the user access to a whole load of special effects that can be applied to any voice to alter it in some way. These can be split into three groups namely Reverb, Chorus and Variations all of which contain sub-groups.

While XG is not as widespread as GM, there are still many programs that make use of it (Karelia2 for example). Examples of hardware that complies with the XG standard are the Audio Dynamics DMI card fitted with the XG upgrade card (this is now all sold by Expressive Software Projects) or Yamaha's very own MU10 modules that can be linked to a computer either via a MIDI interface or serial port.

What is DSP?

DSP (Digital Signal Processing) is a method of changing the character of a sound or sounds. Typical DSP effects are reverb and chorus and these are both included as part of the XG standard.

DSP used to be done with dedicated hardware due to the large amount of complex calculations that were needed to perform the task. Now, with the advent of more powerful computers, DSP is increasingly been done in software, giving rise to powerful applications such as Oregan Developments' StudioSound.

Product details

Product:	Karelia2
Price:	£64.63 inc VAT & delivery
Supplier:	Q-Tec, Unit 16, Brougham Enterprise Centre, Brougham Terrace, Hartlepool. TS24 8EY.
Tel:	01429 890800
Fax:	01429 890800
E-mail:	sales@q-tec.demon.co.uk
Web:	http://www.q-tec.demon.co.uk



Dave Acton and **Dave Lawrence** with more stuff to feast your eyes on

star info

CHALLENGE UPDATE

It may well be that the official deadline for our latest challenge – to write a program to produce convincing garbage – has passed by the time you get your hands on this issue. If so, but you still feel like having a go, do send us your program. Our challenges are fairly flexible affairs (we still get Cloud generators from time to time!) and we will quite happily include a late entry or two if they are particularly good. For full details, see last month's *info.

The Pointer Mister

Author: Alexander Thoukydides

The 'Mr.' in this case is **Alexander Thoukydides** who was inspired by Andrew Bolt's *MouseP* program from last year's June issue. This simple little BASIC program drew an enlarged pointer on the screen and made it wibble and wobble as you moved the mouse around the screen. It also turned to point in the direction the pointer was moving. In the April issue, we received a partial update of this idea from Dennis Ranke – he took the orientation part of Andrew's original and crammed it all into a module. This latest (and final?) update from Mr. T puts the wibble back in!

Not only does it wibble the pointer, it also detects when it has changed into a double-click and even a caret and a pop-up menu. In all these cases different pointers are displayed. We particularly like the palm tree-like effect given by the wobbly caret!

The code is fully module-resident and works by intercepting the vertical sync event, this means it will work outside the desktop if you so wish. All rendering of the pointer is performed using some of Alexander's own polygon and line draw routines. These were needed as it was not possible to use the sprite redirection SWIs from within an interrupt routine.

The different styles of pointer are implemented by intercepting the calls used to change to pointer shape – OS_SpriteOP 36 sets the pointer shape from a sprite. If the sprite name matches a list of known pointer names, then the standard pointer is replaced with a suitably wibbly one.

If all this wasn't enough, a *command is provided to allow you to fiddle with wibble. (Eeek, I sound like a Radio 1 DJ!):

```
*CrazyPointerWobble [-nowobble] [[-friction] <value>] [[-spring] <value>] [[-force] <value>]
```

-nowobble Disable the pointer wobble. This results in a pointer that just rotates to follow movements.

-friction <value> The amount of friction. Increasing this value stops any wobble quicker.

-spring <value> The strength of the spring restorative force. Increasing this value makes the pointer wobble faster.

-force <value> The scaling between mouse movements and the effect on the wobble. Increasing this value makes the wobble more sensitive to slow motions of the mouse.

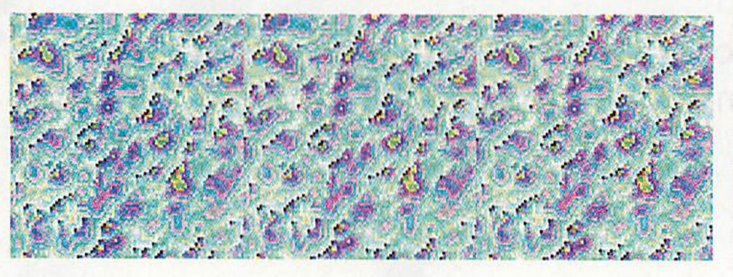
All three numeric values are specified on a logarithmic scale in the range 0 to 10, with a value of 5 being the default.

If you are interested, Alexander has supplied the full, commented source code to the module. The sections on polygon plotting and the fixed point maths routines may well be of interest.

Protoplasm

Author: David Blake

We've seen any number of plasma generators over the years, **David Blake's** *Plasma180* gets a mention because of the significance of the '180' – no, not 180 degrees, or three double tops, but 180 bytes – that's a measly 45 instructions! The algorithm works on a whole



mode 13 screen and really needs a StrongARM to run at a decent speed. Don't worry when you first run it – it takes a few frames to change from solid colour. Keep your eye on the top left-hand corner and suddenly it will explode across the screen.

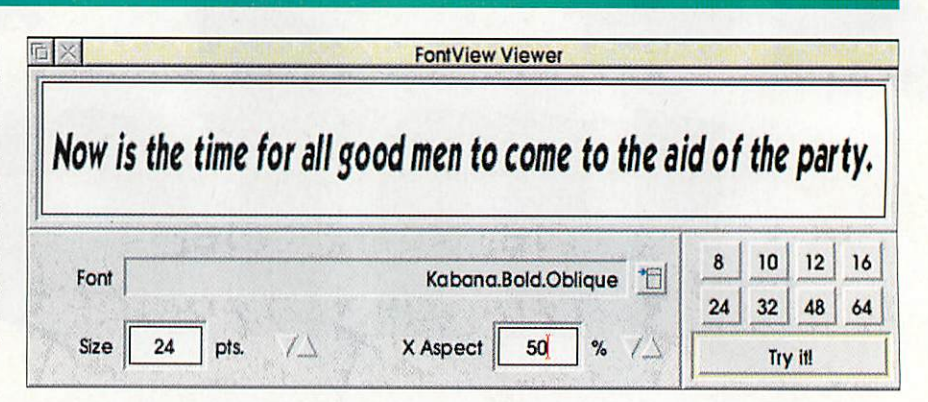
Type Writer

Author: Keith Gaughan

This useful little application from **Keith Gaughan**, lets you look at the fonts you currently have installed on your system.

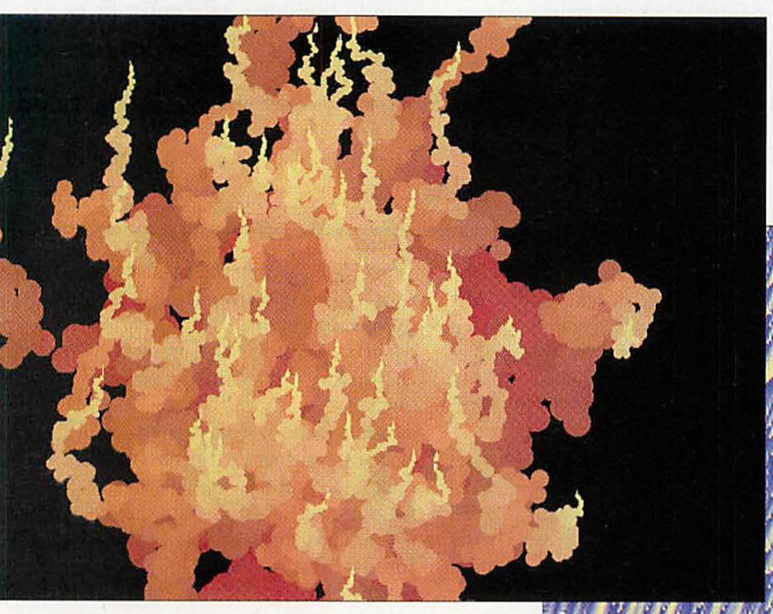
The bottom part of the *FontView* window contains the usual set of buttons for changing font properties: A pop-up menu is provided to show the full list of fonts along with a point size selector and aspect ratio field. A selection of useful sizes is also directly accessible by clicking on the icons on the right. Once you have made a selection click the 'Try it!' button to see your choice.

The large box at the top of the window displays a sample piece of text and this can be changed to anything you like by clicking in the box and typing. This piece of text can be changed permanently by editing the messages file in the resources directory.

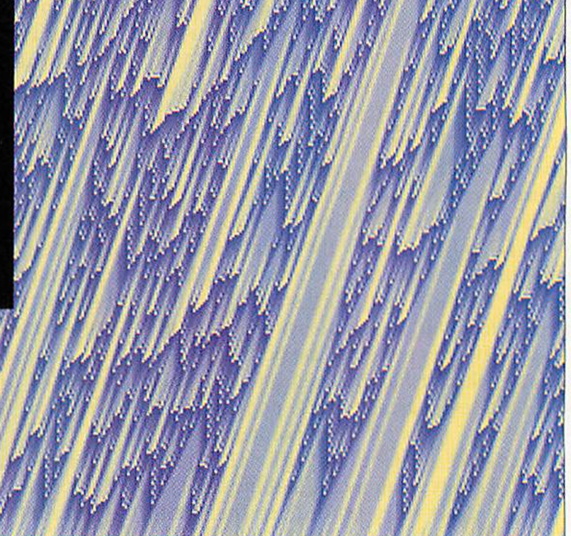


A tale of three ditties

Author: Nigel Stoner



Finally from Nigel is *Ka-Boom!* This, in his words, produces a 'nice explosion when drawn'. We were wondering if you can have a nice explosion, but fireworks are quite pretty I suppose. The only problem with *Ka-Boom* is it does have a disconcerting *Challenger* feel about it.



...or three short and sweet graphical ditties from **Nigel Stoner**. *Icicles* and *SunRays* were both cast from the same mould – if you look at them character for character it's quite hard to tell them apart! Both are 2D cellular automata, the difference is the first one looks like a whole heap of stalactites (can you have a heap of stalactites?) and the second like a stream of sun-rays shining through some, er, blue, trees.



How Hanoi-ing

Author: Alain Brobecker



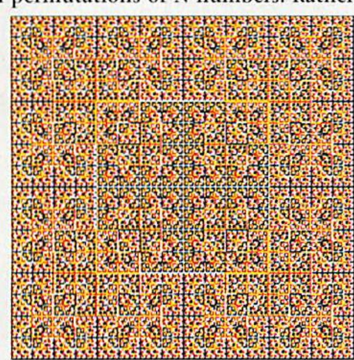
The *Towers of Hanoi* is a classic puzzle – three pegs and a stack of discs of different sizes. Moving only one disc at a time, move the pile from one peg to another never placing a larger disc on top of a smaller one. The puzzle has a classic recursive solution:

Given N discs on peg 1, move N-1 discs to peg 2, move disc N to peg 3 then move the N-1 discs to peg 3. The 'move N-1' is of course the recursive bit.

This solution is neatly demonstrated by **Alain Brobecker** in two simple BASIC programs. The first, *Hanoi*, is commented and expansive. The second, *Hanoi254* does the same task (but with more discs) but fits in 254 bytes! It is not, however, a one line program as it requires two procedures.

(Believe it or not, it *is* possible to have a one line recursive program – we explored the possibility way back in December 1991. Our original example, *Recur1* is lovingly recreated this month – it draws the classic 'Persian rug' pattern.)

Alain's second program also uses recursive methods to list out all permutations of N numbers. Rather bizarrely the program starts off by asking if you are a poet. Answer 'N' and you'll get the boring 12345, 12354, etc. Answer 'Y' and, thanks to Moliere, a little bit of poetry is introduced into the harsh world of mathematics. It may be French, but I'm sure you'll be able to pick up the idea.



Many happy (carriage) returns...

Birthday is possibly one of the most useless applications ever written – it tells you if any modules have their birthday today. It will also inform of any recent or forthcoming anniversaries and how old the module is. Silly maybe, but quite cute. The idea came from seeing the output from **help modules* – a nice list of module names and creation dates – surely *someone* would like to know that WaveSynth was one year old today...

The original version of *Birthday* was written many, many years ago and I was never really happy with it – it was always a little bit raggedy and didn't quite do the right thing. The idea lay forgotten until a month or two ago, when I came across the source code on an ancient floppy. The first thing to do was to ignore this and start again from scratch. The result is an all-singing, all-dancing, useless program.

It is command line only (it hardly seemed worth writing a WIMP front end!), so from the command line or a task window, type ***birthday**. You can also double-click the application, but the output will come out in a non-movable command window. By itself, the command tells you of birthdays today, and those within 14 days either side. It will list the modules and their ages.

You can modify the command in a number of ways: adding *-next <n>* and/or *-last <n>* will extend the range of dates printed to *<n>* days.

```
*birthday -next 2 -last 2
1 May 1998:
  2 birthdays today:
    NetStatus is 7
    DrawFile is 2

Forthcoming birthdays:
  Tomorrow:
    SoundScheduler will be 2
  2 days time:
    TinyStubs will be 2

Recent birthdays:
  Yesterday:
    Podule was 2
    AUNMsgs was 2
  2 days ago:
    ARM was 2
```

You can also nominate a different date, say if you'd like to find out which modules you share your birthday with:

**birthday dd mm yyyy*

Finally, you can ask for information on a specific module

```
*birthday Podule
Podule is 2 years and 1 day old
```

This will tell you how old the module is and if within 14 days of its birthday, inform you of the exact date. Again, you can extend the range with *-last* and *-next* and also give a specific date.

The full syntax for the command is:

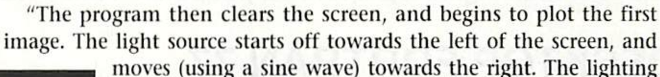
```
*birthday [dd mm yyyy] [module] [-last n] [-next n]
```

We were going to put this program in the April issue, but we didn't think anyone would believe it. You'd think we had nothing better to do with our time...

Next month, a utility to tell if your podules are not feeling very well.

Good egg

Author: Dean Alexandrou



A very good egg in fact, and a small one at that. This sub-1K masterpiece is the first of a brace from **Dean Alexandrou** of Colindale, London.

"You asked for circular" says the author, "you asked for creepy, you asked for under 1K. You have it all with my *<1KEgg*. All it needs is 480K screen memory, and patience." The effect is rather creepy, due to the spooky oscillating light source – there's a bare light bulb swinging away up there somewhere, and Alfred Hitchcock is probably standing behind the giant egg.

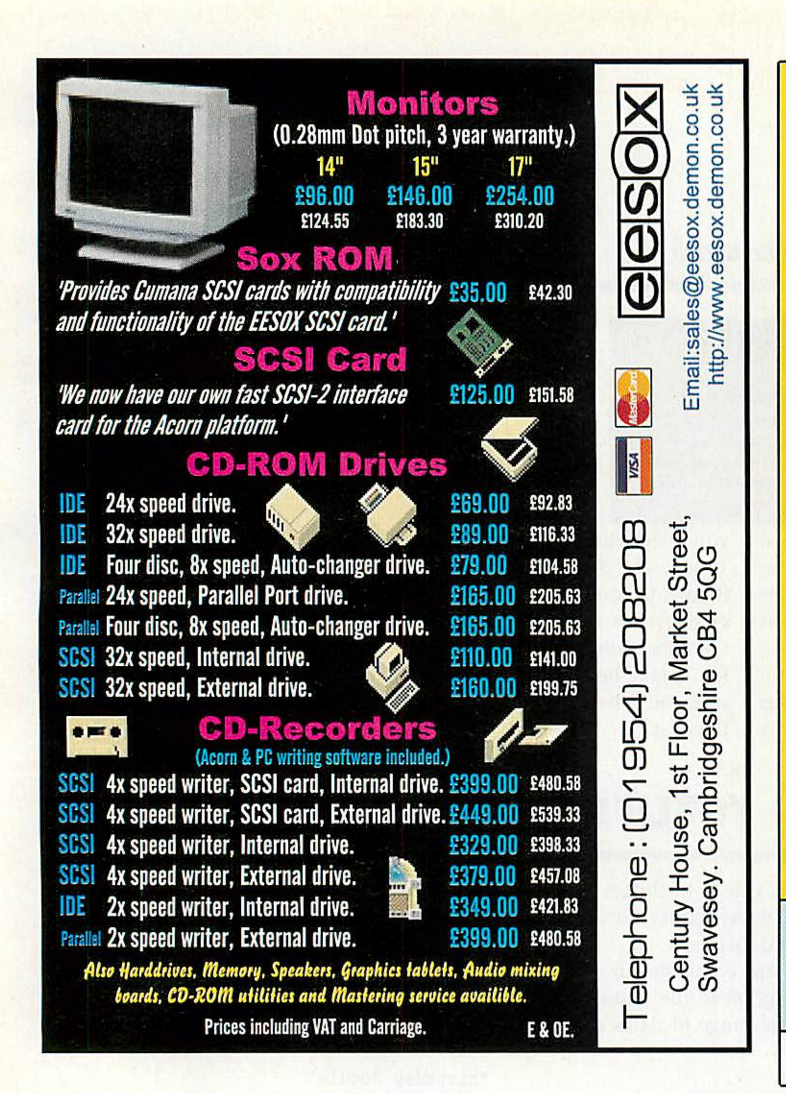


"To start with, the program draws the egg, which is done by plotting circles of decreasing radius close to one another. Next, the program 'scans' the width of the egg, from bottom to top. It does this using a sort of ray trace. A point is sent from the left side of the screen to the centre of the screen, and stops when it reaches a non black pixel. The distance remaining from the centre is then recorded into an array, and the process is repeated a little bit higher up.

"The program then clears the screen, and begins to plot the first image. The light source starts off towards the left of the screen, and moves (using a sine wave) towards the right. The lighting effect is created by calculating the distance of a point from the light source using co-ordinates (and pythag) on a plane. The colour is the brightest when the distance from the light source is the lowest – the colours have been ordered this way at the start of the program (the reflection of the light source is just a circle, where the size is linked to the distance from the centre). The colour is then mapped to the egg, using a combination of sine waves, and width measurements.

"This process is repeated 12 times, once for each screen bank, and the screen banks are interchanged at high speeds to give the effect of a light moving from left to right and back.

"If the egg doesn't quite look 3D, that's because it's not. No 3D programming techniques have been used. Just short-cuts, and effects."



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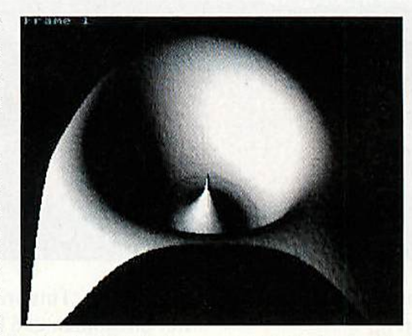
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e-mail: sales@intint.demon.co.uk URL: http://www.intint.demon.co.uk



Wave machine

Author: Dean Alexandrou

And so to the second of **Dean Alexandrou**'s mini-masterpieces. *<1KWaves* is much in the same mould as *<1KEgg* – it too is less than 1024 bytes in length, and requires a little patience while the animation is created.



You have a choice of wave type. Type 1 is a diagonal sine wave. Dean describes the effect as that of "travelling North East across similar sand dunes". Speaking as one who lives in the North East, I don't know of many local sand dunes, similar or otherwise, but you know what he means. If anyone has seen the opening shot in *The English Patient*, this is probably the best simulation you'll get in under 1K!

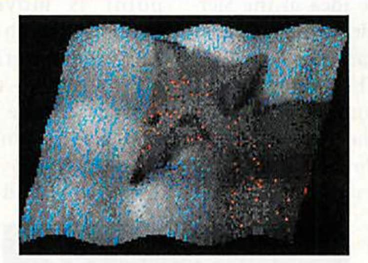
Alternatively, choose a type 2 wave. This crosses a sine wave with a log function and a 'bit of pythag' as Dean puts it. "The sine wave is obviously responsible for the waves. The log function is responsible for the decreasing wave lengths, and the spike in the centre; and the pythag is responsible for making the wave centred around an origin, and circular. The effect produced is, well, weird. But cool.

"The colour of each square is calculated by subtracting the height of the bottom-left corner, from the height of the top-right corner, which is why the light source is coming from the diagonal. The perspective is created using a simple multiplying factor, and is not real, or correct, but it'll do. The apparent shadows come about by the sine waves, and the lighting technique. The steepness of the waves is just enough so that a shadow should not be cast on the next wave – which makes it seem as if there would be a shadow, if the waves were steeper – if ya know what I mean?"

Flag waving

Author: Jan Vibe

Quite literally, in fact. The animated ripple theme continues with this latest offering from our old Danish friend and doodle-king **Jan Vibe**. *Flag* simply takes a sprite file and creates a short animation by mapping it onto a rippling flag. This takes about 20 minutes on Jan's A5000. (Rumour has it that Jan has recently acquired a Risc PC, so watch this space to see what he gets up to with it...)



The animation, when complete, is saved as a sprite file and can be replayed using *Player*. *Player* is useful for viewing an animation before converting into an animated GIF (e.g. for a Web page). See Jan's programs in the December '97 issue for more ideas on this. Just in case you haven't got a sprite to hand, a small example is included in Jan's directory on the disc.

Tax disc

Author: John Peachey

Well, to be precise, a program to help calculate your tax, on the disc. **John Peachey** of Gloucester has produced this utility to check if you're coughing up more than you ought to be to your local friendly Inland Revenue office.

As the author points out, it is only really designed for people with simple tax affairs, i.e. one main salaried job. It includes the data for the 98/99 tax year and numerous help files to explain the software, tax codes and the like.

Once installed, select the tax year to check (94/5 to 98/9) and enter your total pay to date in the salary box. Now enter your tax code in the box below. Choose a weekly/monthly check and type the current week/month number in the box (Inland Revenue months, rather than calendar ones – use the menu provided to bring up summaries of these.)

Once you have entered all the information required, click on Calculate and your tax due will be displayed. If this is within a few pounds of what you have paid, don't worry. If not, you might like to check your tax bill!

There are a few restrictions. The software doesn't currently cater for those with K or NT codes. Emergency codes also cannot be accommodated, for obvious reasons.

TaxCheck was written using, and I quote, Clares' "excellent" *WimpBasic*, the necessary modules of which are included in the directory.

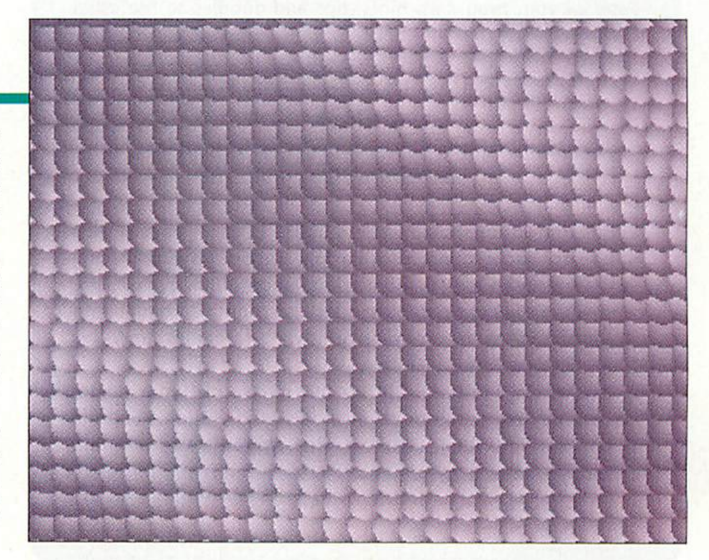
Wobbly bits

Author: Philip Mellor

It is by no means entirely obvious why this demo from **Philip Mellor** goes under the name *Wobball*. It might imply there is some wobbling going on, which isn't the case, although balls abound. It is, in fact, yet another demo under this month's "animated wavy thing" umbrella.

When run, your are asked how many frames you would like in your finished animation. Mode 9 is used and 40K will be needed for each frame – stretch your Wimpslot bar accordingly beforehand. At least 20 frames are needed for a good animation, although if you have plenty of memory (and a fast machine) do select more.

Each frame consists of a layer of spheres, built up from the bottom. Each sphere is shaded, and the shading is subtly altered as the screen is plotted to create a wavelike effect. When the final animation starts running, you can control the speed (using 1 to 9) and reverse the direction with Space.





The plot thickens

Author: John Whitington

Chunky graph plotting from a titchy program here. The latest thing in sub-256 bytes program is *LineGraph* which the author, **John Whitington** describes modestly as a simple graph plotter, written in a single line of BASIC.

As expected, *LineGraph* makes use of that ever-popular BASIC EVAL command (where would we be without it?). Simply run and enter formulae in terms of X (must be capital – no room for case checking here!)

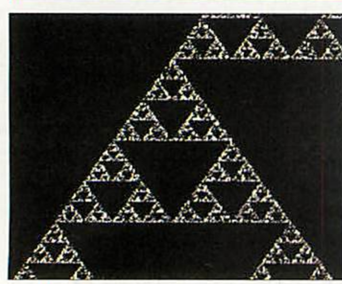
Some to try include:

```
SINRAD(ABS(X))*SQR(6400)*PI
or
(4*X)+7 or
RND(ABS(X)) or
RND(SINRAD(ABS(X))*200)
```

"Because the scales are set at -360° TO 360° both ways, the plotter is not very happy about 'division by 0' or 'Number to big' errors. This would require full parsing of the string, which is not possible in 256 bytes. The divisions on the axes are every 30."

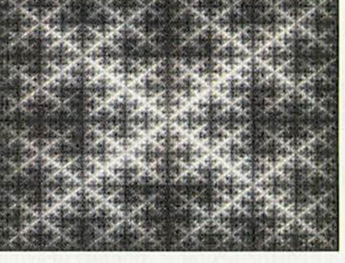
Sierpinski Suite

Author: Scott Boham

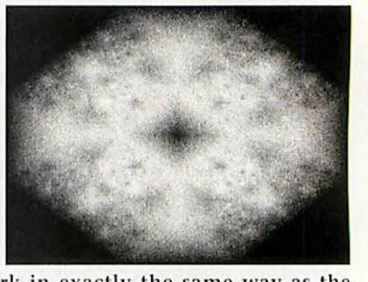


A collection of variants on an old theme from a regular name. **Scott Boham** has extended the idea of the Sierpinski triangle with a few more ARM-code variants. In all, six demos can be found on the disc. The number after each filename is the mode it runs in – there are low res (mode 13) and high res (mode 28) flavours of each recursive design.

Sierpinski's Triangle, or more accurately, Gasket, is named after the renowned Polish mathematician Waclaw Sierpinski, one of the fathers of fractals. The term 'gasket' came from the idea of filling a space with circles, and the gaps between them with yet smaller circles. The overall effect was described as resembling the gasket of an engine with an infinite number of cylinders, and so the name stuck.



Often, what appear to be true Sierpinski triangles are in fact just cheats, using recursive triangle plotting. *Triang13* and *Trians28* use the correct method, which is what makes the whole idea of the gasket so incredible. Random numbers are key to the plotting technique. Starting at one vertex of a triangle, another is selected at random, and the plotting point is moved halfway towards it. This is simply repeated indefinitely. You might expect that a solid mass would be plotted, but instead the familiar gasket shape emerges.



Square13 and *Square28* work in exactly the same way as the original except that five points are used – the four corners of a rectangle, and the centre. As with *Triang13/28*, scaling down random numbers to get a range of 0 to 4 would be awkward and time-consuming. Instead, random numbers from 0-7 are generated (using a simple AND with the random word) and if the result is more than 4, a new one is generated. *Oct13/28* is yet another variant, this time with eight vertices from which to select a random destination.

And when you run the demos on your state-of-the-art 32-bit hardware, do spare a thought for the vision of Sierpinski, who came up with idea in 1915!

*QUIT

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Macclesfield SK10 4NP
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You needn't include a letter but please put your name, address and program title on every disc and include a text file containing your name, address, disc contents and program details. A SAE will ensure your discs are returned. If you are responding to a challenge, please mark your envelope accordingly.

Compatibility table

Program	ROS 2	ROS 3.1	ROS 3.5+
Line Graph	No	Yes	Yes
Flag	No	Yes	Yes
Player	No	Yes	Yes
Crazy Point	No	Yes	Yes
Icicles	Yes	Yes	Yes
Ka-Boom	No	Yes	Yes
Sun Rays	Yes	Yes	Yes
Toxcheck	No	Yes	Yes
Wobball	Yes	Yes	Yes
Font View	No	Yes	Yes
Hanoi	Yes	Yes	Yes
Hanoi 256	Yes	Yes	Yes
Permute	Yes	Yes	Yes
Recur 1	Yes	Yes	Yes
Oct 13	Yes	Yes	Yes
Oct 28	No	Yes	Yes
Square 13	Yes	Yes	Yes
Square 28	No	Yes	Yes
Triang 13	Yes	Yes	Yes
Triang 28	No	Yes	Yes
Plasma 180	No	No	Yes
Birthday	No	Yes	Yes
<1K Egg	No	Yes	Yes
<1K Wave	No	Yes	Yes

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Scope for *improvement*

Mike Cook creates a soft oscilloscope

A few months ago I got a couple of e-mails asking me to make a real-time oscilloscope as one of my projects. I was going to reply that I'd already done it, but when I looked up the reference it was way back in 1992.

To make matters worse, the software was not in desktop format and would no longer run on the latest machines or processors. Also the hardware I used was designed as a sound sampler and, while it showed the normal range of audio signals, it contained filters that limited the top and bottom response. So I thought it might be appropriate to revisit the topic and make a really up-to-date oscilloscope.

There are various options when it comes to designing oscilloscopes, most of which involve trade-offs between complexity of hardware and sampling rate. On this one I've chosen to concentrate on minimising hardware at the expense of the sampling rate. But with a rate of 12K samples/second it's not slow by any means and the real-time display is lively and responsive. In the future I might look at multi-channel input and faster data rates. In order to simplify matters even further the sample rate is not varied by the hardware but the software is used to drop samples to look at the broader picture.

Let's look at the hardware first. I have used the ADC 0831 which has the advantage of being quite simple to interface as it has a serial output. This means it only needs a single bit input to the computer and two outputs, allowing it to be used with computers that only have a single directional printer port. The price you pay is that the maximum sample rate is slower because you have to read each bit separately, and one of the factors determining the maximum sample rate is how fast the computer can access the hardware.

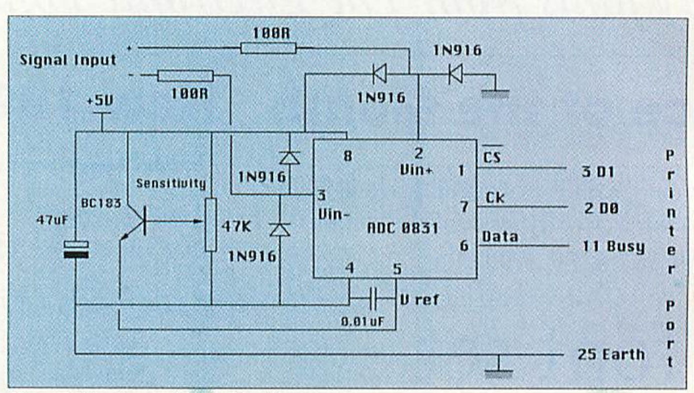


Figure I: Hardware for the Oscilloscope

Although processor speeds have shot up enormously over recent years, the fact remains that getting a signal into the computer is no faster than in the old Model B days. I know you can get faster input with specially designed podule hardware but I'm talking about User/Printer port access. The ADC 0831 has another advantage in that its voltage reference can be turned down to a fraction of a volt.

The voltage reference is the voltage the input has to reach to give the maximum digital reading. It's normally in the region of 3 to 5 volts so you need to amplify most signals before presenting them to the input. This particular A/D allows the reference to be very small and you can easily make a sensitivity control. Finally the ADC 0831 has a differential input so you can measure voltages relative to any voltage not just earth.

If you want to be conventional simply connect the -ve signal input to earth. The hardware circuit is in Figure I and is fairly minimal. An important point are the diodes across each input to the A/D. These protect the device if the applied input signal deviates outside the power supply rails. Under these conditions the 100R resistors will limit the current. The reference voltage is supplied from a transistor wired as an emitter follower, fed from a potentiometer.

You can't just feed the potentiometer into the reference voltage input as the chip requires its reference to be a low impedance. This arrangement gives a small dead range at the maximum end of the sensitivity range. If this is unacceptable then a small fixed resistor can be placed in the earth side of the potentiometer.

In order to get a reading out of the A/D you need to apply some signals to it. See Figure II. Basically, the chip select line is held low while the clock signal is waggled up and down, then the data emerges from the chip. The job of the software is to take these individual logic levels and assemble them into a byte. This is a job you need to do as quickly as possible and so it must be done in machine code.

Figure II: Timing for the ADC0831

Previously I accessed the printer port directly but, with processors from ARM 3 up to the latest StrongARM, there's a cache that gets in the way. So the memory you think corresponds to the physical device is actually a memory location on the processor chip. Therefore, waggling a bit up and down has no effect on the real output.

The solution is to access the hardware through the appropriate system hardware calls. It slows things down but, as luck would have it, slows it down to the exact rate we need. It's not really luck, it's the access time needed to get at the hardware, therefore this time is independent of processor speed. That means it should work even on faster machines.

I did a test to see how fast I could waggle an output bit up and down and it came to 1.5 uS compared with 2uS on the Model B. The big difference is that now you can put in many extra software instructions between the wiggling and have virtually no extra time delay.

The overall operation of the software is quite simple – data is gathered into a buffer and the buffer is displayed. The interrupts must be disabled during data gathering otherwise you see odd distortions in the waveform due to unequal time-sampling as the computer goes away and does something else. However, as you might suspect, there is a lot of detail to embroider this simple schema.

I wanted the software to behave as much like a real oscilloscope as possible. So, as well as a free running mode, I also included a trigger which starts the trace when the signal passes the trigger point going in the direction of the required slope. Suppose the slope is positive and the trigger value 1, you'll only begin to gather samples after the samples received are first less than 1 and then greater than 1. In this way repetitive waveforms are displayed as stationary waves and don't drift over the display. The flow diagram for the trigger software is shown in Figure III. It's important to have a time-out condition as the computer could hang up if you set it a trigger condition that never arrives.

The number of samples gathered depends on the X scale you want. On the finest four settings 344 samples are gathered. Each coarser setting doubles the number of samples until 2752 samples are being taken each scan. At this rate the mouse movement is noticeably less responsive as well as menus and buttons, but the computer is still usable.

The oscilloscope will work in a continuous or single shot mode. In the latter, you have to arm the oscilloscope before a trace will be triggered. This mode is useful for examining what you have gathered more closely. For example you can change the X resolution and look more closely at the signal. Note that if you've gathered data in an X resolution with fewer data bytes than the resolution you are using to examine the waveform, the end of the data buffer will not contain useful information. There is a wipe button to clear the memory so you can make clear what part of the buffer you have used.

There's also a store button to copy a trace currently displayed and colour it red. This is useful when you want to match up a waveform, it's best if you shift the trace towards the top or bottom before hitting store so that it is out of the way of the new trace.

One of the purposes of an oscilloscope is the measurement of time periods of waveforms and the software will allow you to do this. When a waveform is been displayed, pressing the Adjust button on the mouse sets up a reference point shown as a vertical line. Click on Select to bring up the distance between the reference and current mouse position in milliseconds in the small display. A second click on Adjust removes the reference point.

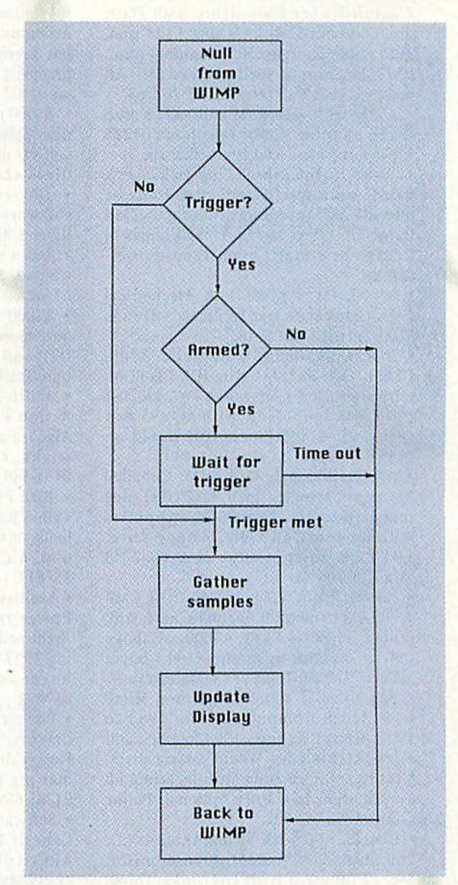
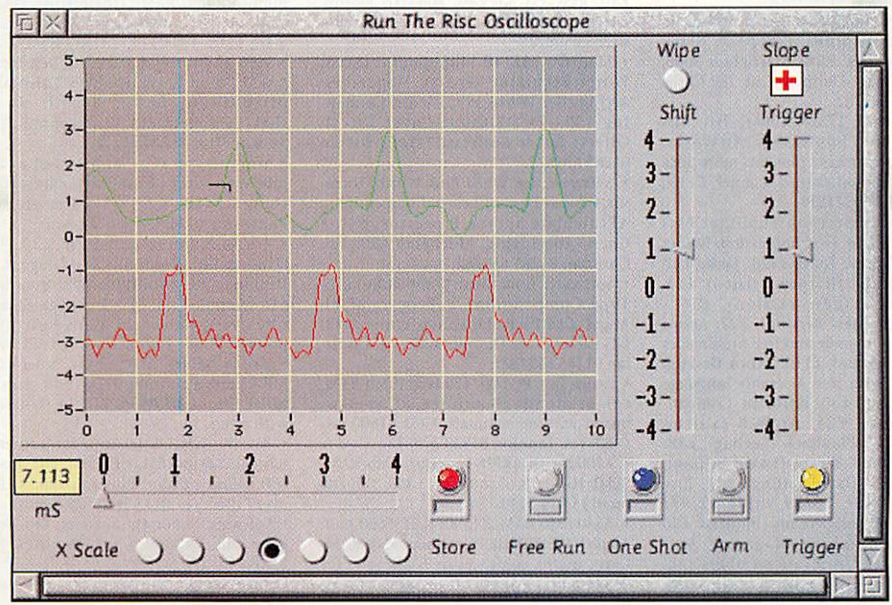


Figure III: Flow of software

The software is calibrated for a StrongARM processor but if you have a slower machine you might like to recalibrate it. All you need is a signal of a known frequency, the easiest one to get is a 50Hz mains signal acquired NOT by connecting it to the mains but just by touching the input with your finger. Your body picks up enough signal from the air. Measure what you get and use the answer to adjust the variable in line 360 so that you get the right timing on your hardware. There's a comment in the line above it so you know you have the right variable.

If you don't feel like building this hardware then remember that the original sound-sampler hardware will work with this software. Next month I'll take a look at it and see how it can be made to work with the new machines. AU



The front-end to the soft oscilloscope

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• Software: Holed Out Compendium, E-Type Compendium, E-Type 2, Black Angel, £16 each. Elite, Starfighter 3000, £25 each. Image Outliner, £30. Tel: Christian 01285 659782.

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• For sale: Impression Publisher Plus V.5.10 (with free: First Impression, Border Disc and Outline Font), £128. Turbo Drivers Epson and HP (new version), £27. Compression (new version), £16 - AudioWorks (new version), £27. Acorn C/C++ (with upgrade and free Archimedes Operating System), £110. Acorn Desktop Assembler (with free Assembly language programming), £80. HardDisc Companion (Beebug), £25. ArcPCB (Silicon Vision), £24 - PlayBack (Beebug), £18. Image Master + Twain (David Pilling), £17. SparkFS (David Pilling), £11. Risc User Magazine 88/89/90/91/92/93/94/95/96 (all numbers inc. binders), £90 (10 each). Archive Magazine Vol. 1/2/3/4/5/6/7/8/9 (all numbers inc. binders) £90 (10 each). E-mail: compare@dmw.it

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• A5000, RISC OS 3.11, 82Mb HDD, 2Mb RAM, AKF18 monitor, manuals, keyboard, mouse, software £190. A4000, As above but no monitor or mouse £100. Buyer collects. Tel: 0161-336-2743 (Manchester)

• A3000, RISC OS, 1Mb RAM, Cub3000 Monitor, Mouse. Two KXP1081 dot matrix printers. Two BBC B computers with monitors, One BBC Floppy drive. LOT £120. Buyer collects. Tel: 0161-336-2743 (Manchester)

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• 5x86 133Mhz PC Card £250. New StrongARM Proccessor £250. New 2.1Gb hard drive £100. Please e-mail me at shahi@argonet.co.uk or telephone after 5pm on 01324 632757.

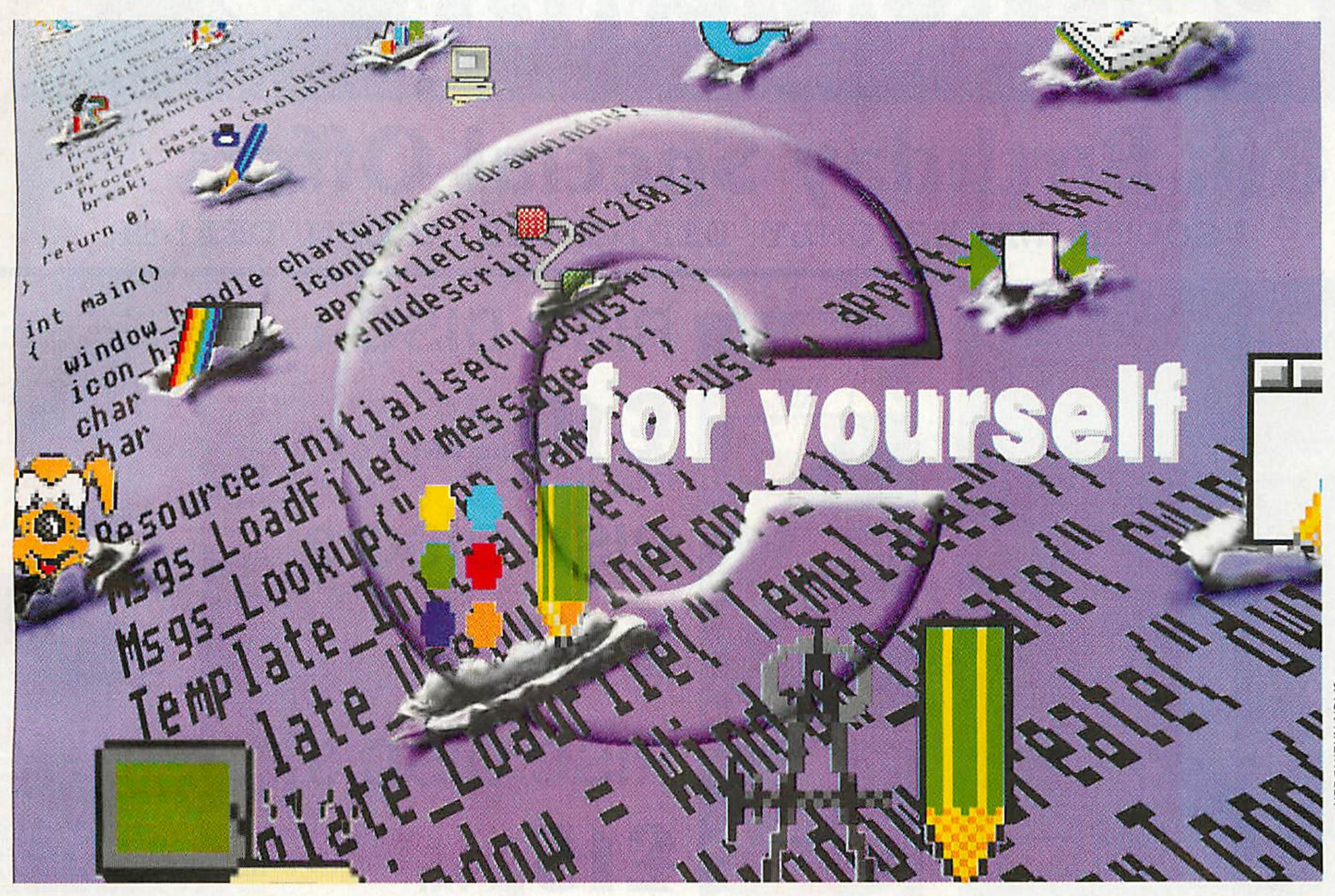
• Wanted: Risc PC. Can have just a case, mboard + chip or can have many other things. Needs RISC OS 3.5 or greater. Please ring 0151-928 8207 (Kevin).

• For sale: Impression Style, £30. Risc Ovation £20. Omar Sharif's Bridge, £10. Dreadnoughts with Bismark & Ironclads, £15. Waterloo, Mig 29, Interdictor2, Sim City, Premier Manager, all £5 each. All + postage. Phone Harrogate 01423 871578.

• Acorn A5000, 4Meg RAM, Sibelius 7, MIDI card, Publisher, HTMLEdit. Lots of MIDI files. Call 0956 307914 (London) with offers.

• Risc PC, RISC OS 3.6 (ideal for teacher or school), 12Mb RAM, CD-ROM, HD, Epson 500 colour printer. Plus software. Offers over £1000. Tel: 0113-260 9939 (Leeds).

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Steve Mumford picks a path through the machinations of the *Draw* module

Following on from the article two months ago, this time round I'll take a closer look at some of the mechanics behind the *Draw* module. We know in essence what it's capable of – a simplified implementation of a Postscript-style drawing technique, the *Draw* module allows you to define and manipulate objects known as paths. These paths consist of straight lines, Bezier curves and move instructions and many different parameters can be changed to affect their appearance – dotted and dashed lines are possible and the joins and ends of lines are also customisable.

In the May issue I introduced the range of different units that are utilised by the *Draw* module and mentioned two of the major SWI calls provided, **Draw_Fill** and **Draw_Stroke**. In fact, these are two offspring of a much more versatile function, **Draw_ProcessPath**, and have been provided so simpler operations can be performed without having to pass a whole load of redundant parameters to the parent function.

These SWIs operate on the same data structures; there are several that work together to fully define a path, including details of the path co-ordinates themselves, the fill style, the dash pattern and the path's caps and joins. We've already met the transformation matrix that's used to scale, rotate and position the resultant path.

The paths themselves are built up of subpaths and these are built up of separate units called elements. The best way to imagine this is to picture a screen with a straight line, a rectangle and a curve displayed upon it. All three shapes could be part of the same path (with 'move' instructions between each one) but each would exist as a discrete subpath.

The objects themselves consist of differing numbers of elements – the straight line could be described as a 'move' instruction followed by a 'draw' command, and the rectangle would just consist of one 'move' followed with four 'draw' orders. The curve is similar to the straight line although each segment would require more parameters, as the co-ordinates of the line's control points have to be stored as well.

So how are these paths stored in memory? The format is surprisingly simple and consists of a long block of words with a special terminator instruction at the end of the list. Each element is at least one word in length and this first word contains the element type (currently in the range 0 to 8). Most of the other elements you can use require parameters, whether they happen to be a pair of words giving the *x* and *y* co-ordinates for a move or draw instruction or a one-word address pointing to another memory block that holds the remainder of the Draw path.

Consider the following memory block – it contains four elements and draws a single straight line from (5000, 5000) to (7000, 8000) in 'user co-ordinates', which are converted to Internal Draw units by placing appropriate scale values in the transform matrix.

```
0:    2
+4:   5000
+8:   5000    (move to 5000,5000)
+12:  8
+16:  7000
+20:  8000    (draw to 7000, 8000)
+24:  4       (close current subpath)
+28:  0
+32:  0       (close path)
```

Once a path has been stored in memory, you're free to plot it to screen, printer or memory using one of the supplied SWIs. **Draw_Stroke** renders a path and sends it to the VDU, changing the line style where necessary, adding caps and joins and 'flattening' the path so the curves displayed on screen are a good approximation to their mathematical descriptions held in memory. **Draw_Fill** does the same, but fills in any closed subpaths as it goes. Both commands will use the currently selected VDU colour and neither will plot outside the current graphics window.

Although **Draw_Stroke** takes values in registers R0 to R6, most of these are optional or provide defaults and the only crucial ones are the pointers to the *Draw* path itself in R0 and to the transformation matrix in R2. R1 holds the fill style, a word whose bits determine which winding rule is used, and whether boundary pixels are filled, but supplying a value of 0 indicates a standard fill is to be used.

The same goes for the flatness and line thickness in registers R3 and R4; a flatness value of zero asks the *Draw* module to make a sensible guess given the current screen resolution and a thickness value of zero indicates that the lines should be as plotted as thinly as possible. 'Thin' lines don't need cap or join information; if this was required, a pointer would be stored in R5. **Draw_Fill** is almost the same, although it only accepts values in registers R0 to R3 since you can't specify line thickness or style with this SWI.

That's all for this month. I hope the material in the last few issues has provided you with the information to be able to plot and manipulate *Draw* paths and files in your own programs. I'll be utilising these techniques next month when I start putting the framework of our label database together. AU

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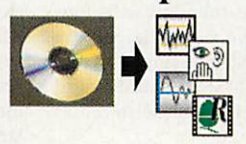
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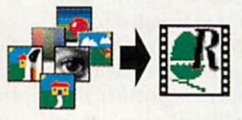
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VISA



Imagine the situation, I am giving a talk to the Manchester Acorn user group and I say this is the software that will appear on the next month's cover disc of *Acorn User*. 'If you want to send data to the organiser you just click this,' and then 'BONG' – missing variable in line 12310.

Well, a bit of a laugh and embarrassment and a small patch on this month's disc, but it brings up an important point. I had thoroughly checked the software – or so I had thought – what was happening was that a global variable was being used before it was defined. In my previous tests I had never clicked this particular icon first and so the variable had always been defined by the time I came to click it. With over a hundred clickable icons it is a little impractical to go through them all to test if you can click each one the first time the program is loaded, so what can be done?

The solution might lie in something called software engineering – this is a programming methodology that tries to prevent mistakes like this from occurring. In a practical sense it is best to have a procedure called at the start of the program that initialises all global variables, but with incremental program development it is easy to miss one out. One of the charms of BASIC is that it allows you enough freedom to make those sorts of mistakes. This reminds me of my favourite title from a book on programming – *Enough rope to shoot yourself in the foot.*

For some time now I have been complaining that Acorn's CD filing system is not quite all it should be. The main problem is that it won't read certain CDs that are produced by NASA and some other scientific institutions. A few years ago I put Acorn and NASA in contact with each other and a few e-mails were exchanged as to who had the correct interpretation of the ISO 9960 standard.

Basically, NASA used extended attribute records (XAR) in the directory structure and claimed that this was compatible with the ISO 9660 level 1 standard. Acorn said it wasn't, or at least compliance with the standard didn't mean these had to be dealt with.

These CDs can be read by a Mac or even an Acorn running DOS from a 486 card, but not from the RISC OS desktop. I even lent Acorn one of these CDs when the Risc PC was launched and I still haven't got it back. I did hear that someone might be rewriting the CDFS to cope with this, but nothing has appeared. Anyway, in a surprise move, the latest CDs from NASA have dropped the XAR format and so are usable on Acorn machines. The latest batch I have got include 14 CDs of a total lunar map derived from the Clementine mission, two CDs from the Viking landers and an introduction CD, 'Welcome to the planets'.

As well as having really huge images on them they all have a WWW type user interface so that it is easy to see what is on each image. What is more, Acorn's *!Browser* (beta Clan CD version) makes a jolly good stab at showing them correctly. The full resolution lunar images are 16-bit monochrome and typically 1560 X 2129 in the PDS format, so not only will you need a good size screen and plenty of memory but you will also need some software to handle this. I am working on it but it might take some time.

If you are interested in this see the file on the cover disc for contact information. By the way, the lack of XARs means that VAX/VMS users can't read the discs unless they have a patch in their system.

On to the problems now and first some responses to past advice. Andrew Moore was having hassle with his PC card getting Windows 95 to display the correct number of colours. Bimal Jangra offers this explanation:

Basically, there isn't any way to alter the colour depth using the Control Panel within Windows 95 as the colour depth is set by the PC card configuration on the RISC OS side of things. What Andrew must do is run *!PCConfig* and set the colours to 256 there (in the Display option), then save the new configuration.

When he restarts his PC card it will show the correct number of colours; please note that he must reboot his *!PC* application in RISC OS from scratch for it to take account of the change – it is not sufficient to leave the *!PC* application on the icon bar and then just switch over to single-taking mode.

However, Colin Wood comes up with this solution:

I had a similar problem when *Windows 95* refused to change from 16-colour mode, meaning that CD-ROMs such as *Encarta* are barely usable. I tried the easy ones first! Playing around with memory allocations didn't help, so I bit the bullet and looked at my *!PCPro* floppy. In the Sparked Drivers directory is directory $.Drivers.Windows. The ReadMe/txt in it gave me the information I needed. I installed Armdrv/drv manually as instructed and then followed the detailed instructions in the Readme file, *Fresh installation of ARMDRV*, within Windows from its control panel. Hey Presto – reset and *Encarta* in 256 colours!

Mike Clarkson from Shrewsbury School has a tip about using Impression:

A while back (March issue) you had a problem from Bob Sapey wanting to know how to overcome a font error in *Impression* when cutting and pasting text from one document to another.

I've had the same problem, which I can't replicate every time, but have found a reasonable workaround. Save the text as plain text, but including style info and then reload it into *Impression*. This conveys most of the required formatting information, but seems to cause no problems.

Ben Holmes from Newport Free Grammar School wants a memory upgrade:

I want to upgrade my RAM with a 16Mb memory package, but I'm not sure about a few things. I wonder if you can help me with them?

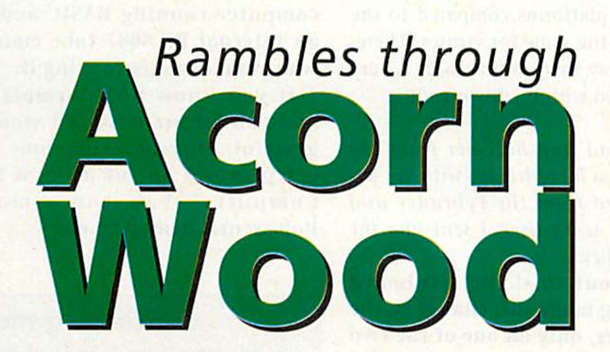
Do I have to replace my original 10Mb with the 16Mb package or can I put the package into a different memory socket in my computer? If so, will this mean that I have 26Mb instead of 10 or will I only have the 16Mb that I will have bought?

There are two sockets for memory inside the Risc PC (OK three if you count the video memory). With 10Mb you could have 2Mb of video memory (the maximum) and 8Mb in one socket leaving the other socket free or 4Mb in each. If there is not a free socket then you need to remove the smallest memory board and replace it with a higher one. That means you would have 22Mb or 24Mb if you had a free socket.

John Penton at Trinity College, Cambridge is having a bit of a constructional problem:

I have been attempting to hook up my Risc PC 600 to an PCF8574 as you described in *Acorn User* December '95. The setup thus far is very simple – a Eurocard connector with a small piece of veroboard (more recently breadboard) containing a socket, the chip and a power supply capacitor.

All address lines are connected to ground. When I fire up the IIC programs the computer complains that the device is not responding. I have so far tried two chips, every address for both types of chip and am still getting the same response. What might the problem be? My best guess is that the IIC controller chip is not functioning, but you said that it also runs ➤



Another question and answer session with **Mike Cook**

Rambles through

Acorn Wood

the clock which is functioning correctly, so I don't think it is this.

Actually there is no IIC controller chip as such, it is all implemented in software with two lines from the IOC. As you say, if the real-time clock and calendar as well as the parameter RAM is working, there is nothing wrong with the computer. That leaves only your software or hardware. Try running my IIC monitor software on it. That will eliminate the software side, which will just leave the hardware which I suspect. It is unlikely to be the chips and is more likely to be the wiring.

Make sure you have used the right row of the podule socket, this is the top row for 19c clock and 20c data and the bottom row 1a – 0V, 32a – 5V. Check with an oscilloscope that you are indeed getting a clock signal on the pin of the IIC chip. Likewise, check that the data line flaps up and down and there is power on the actual chip pins. Finally, make sure you have a disc ceramic capacitor of 0.1uf to 0.01uF across the supply close to the chip for supply decoupling. Chances are you are doing something 'daft', i.e. not doing what you think you are doing.

Richard Sage was on a trip to the High Energy Physics facility of Liverpool University and he used this opportunity to send me an e-mail:
Is there any way that you could perhaps publish a schematic diagram of how to convert a 15-pin monitor output to either a phono connector or a BNC connector, which would enable my A5000 to be connected to a video editing machine?

I was trying to add some credits to a video in school – I had written a BASIC program which included fades etc., but couldn't see any way of linking it to the video mixing desk. In the end I had to resort to filming the monitor screen but it was a tacky display.

Unfortunately it's not just a question of a lead. The signals from the back of the computer are in the form of RGB signals and a mixed sync. The BNC connector on the editing machine requires a composite video signal, that is all the signals mixed together and PAL encoded. To do this you require a PAL TV coder of the type sold by Pineapple Software.

Next, Simon Evens from Llandysul wants me to act as an arbiter:
I wonder if you could settle an argument and tell me if it would be possible to connect an AFK53 monitor to a StrongARM Risc PC and if so what are the limitations? Also, I currently can only access the Internet using a friend's PC and I would like to know what is the best way to get RISC OS files to work on my Acorn after downloading them. How safe is it to download Acorn files from the Internet as some friends have had bad experiences with downloaded PC programs?

In short yes, the StrongARM bit has nothing to do with it, it's just the Risc PC bit. This has a VIDC20 chip in it and, as we saw last month, is capable of even running in normal TV mode. The limitations are that the usable resolution would not be so great but you would have to experiment with the 'make modes' application to see what you thought was a reasonable maximum on the monitor.

As to the Internet, any RISC OS specific file is likely to be in a compressed form widely used on our machines but not used on others. Most of them I have found have been compressed using *Sparkplug*. Therefore when you get your disc, copy the file onto your hard disc and then drop it onto the *Spark* icon. It should then decode.

If it does not then drop it onto the editor icon or something like *Zap* and see if you can tell from the first few bytes what it was encoded using. Occasionally I have seen Acorn files in UUencoding or Zip format. You should be able to get decoders from the same site as you got the file.

As for safety, there is always a small risk of downloading a virus, however this is far more likely with a PC than any other platform. In a recent report I heard that there were over 2,000 documented PC viruses whereas for the Mac there were only 32 and none were malicious. Now you know the ratio of available software on those platforms compared to the Acorn, it might be the same for viruses. Therefore while I can't say there is no risk it is very very small compared with PC downloading.

Last month we had Aad Bezemer from the Netherlands having a bit of trouble with my serial interface board from the February and March 97 issue of Acorn User. I sent him the solution and he replies:
You're right about this! the I/O board works fine having made this change in the program. However, only on one of the two A310s my children have as some time ago one machine had a severe hardware problem. With this machine now only the output part of the I/O board is working all right. I suspect its serial circuit has been damaged. Do you have any suggestions?

Well as the output side is working it looks like it could be the serial input buffers. The chip to look out for is IC6 a 26LS32. Unfortunately this is soldered into the board (not the brightest idea Acorn) so it could be tricky to replace. Pin 9 has the serial data signal going in and it comes out on pin 11.

Therefore, if you see a signal on Pin 9 but none on Pin 11 the chip needs replacing. However, it could be the serial chip itself but I think this is very unlikely, this is IC9 and is a 65C51. Best of luck hunting it down.

Tony Mackley, from Teddington, wants to spread the news but can't, he writes:
In David Matthewman's article, Spreading the news – *Acorn User* May issue, on page 35 top right box: he wrote: 'In order to download this, you need another program called a 'fetcher'. E-mail and news fetchers are built into the commercial Internet suites, to KAQ and to Acornet.'

I am using *ANT Internet Suite II* and ANT were unable to help me in suggesting a 'fetcher'. I should be grateful if you could lead me in the right direction.

I think you've got hold of the wrong end of the stick here. What David was referring to as a 'fetcher' was the application that reads the e-mail from you account. As you use the *ANT Internet Suite II* you already have the fetcher software, it will deposit your mail in a directory, then all you need to do is to direct the mail helper described in David's article to this directory.

Does anyone have any old software to help Mr R.W. Fulker?:
I have a BBC Master Computer With a Techmatic Hard Disc in an external bridge. The 30M hard disc has been used temporarily in an Apple Mac computer where it was reformatted for use on the Apple.

I now want to reformat the disc for use in its original position with the BBC master (ADFS?). How can this be done, as the welcome disc does not include a formatter for hard discs? This disc was supplied originally for use with the BBC Master computer running BASIC and DOS using an internal PC 8087 tube emulator and I want to recommence using it.

If you know of a formatting utility and can let me have it I would be most grateful. There are still some people who get pleasure out of using a BBC Master Computer! You can e-mail me on Bob@senris.demon.co.uk

AU

Contacting me

You can contact me, Mike Cook, by post at the usual *Acorn User* address or by e-mail at: auqanda@idg.co.uk



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2. Kerning is
- ❍ Adding space between lines of text
- ❍ Altering the white spaces between individual characters for optical spacing
- ❍ Tweaking the font shape

3. Which were the first nations to develop movable type?
- ❍ Germany/France
- ❍ Britain/Holland
- ❍ China/Korea

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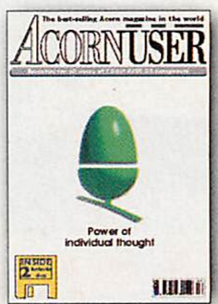
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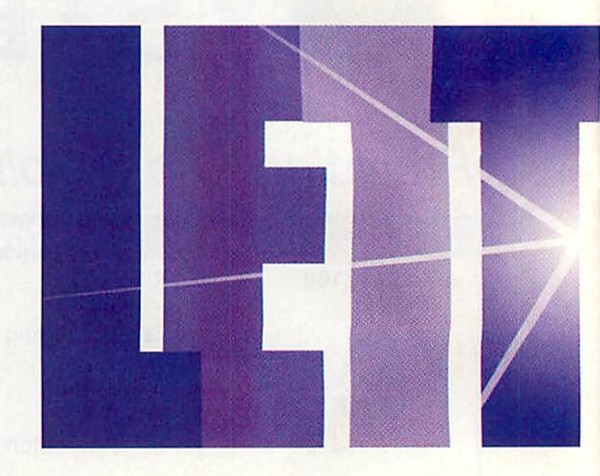
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Settling the score

In reply to David Andrew's letter (May 1998) about *Sibelius 7*: I agree that *Sibelius 7* is not perfect and it does indeed have a number of limitations that were in-built from the start. This is why we decided to stop extending the present unwieldy machine code and start again by developing a brand new score writing program in C++.

We even took the unusual step of writing to a large statistical sample of users, to find out which features they would most like to have.

Also, lest any readers got the impression that our new program *Sibelius VMP* is a 'PC port' of *Sibelius 7*, it just isn't: *Sibelius 7* could never be ported to PC or indeed any other platform, because it's impossible to port machine code. *Sibelius VMP* is a completely different program from *Sibelius 7*, with not one byte of code in common; it's being written entirely from scratch, in a different programming language, with a different file format, and by a different team of programmers.

Finally, far from receiving complaints that we have been selling people the wrong computer all these years, we find that the vast majority of *Sibelius 7* users have become Acorn converts who are only too glad they didn't get a PC – and they're looking forward to *Sibelius VMP* as much as anyone.

Ben Finn, Managing Director
Sibelius Software

Keeping the flame alive

You may as well know that this is somewhat of a flame, though don't expect me to get passionate about it because that isn't my style.

This concerns a letter that appeared in *Acorn User* (June 1998). Now, what do you think might have stirred me to write in, considering I have never written before in all the years of reading AU (and that

Tessellation software

As a Parent Helper who manages the ICT room at my local 12 class Junior school where our ICT budget just about rises to one piece of cheap software per year, I am always on the look our for good ideas from your columns each month. Recently, talk in the staff room about tessellation sent me off to the back issues and it wasn't long before my eyes lighted on the October 1995 review of *Versatile*.

I agree with your comments about the cost of a site licence, especially for a program which is likely to be used only a few times a year. Then the January 1996 issue raised my hope, but raised two problems; one the price of *!Vector* and the other, my inability to get the output of step 4 into *Paint* so as to flood fill it. So I set off to see how much I could achieve with just *Draw* alone.

I have a great respect for *Draw* and it comes free by kind permission of the green nut. Not that I go so far as one teacher who claims to use it for everything, including school reports and wordprocessing. I recalled the occasion when I had used *Draw* to create a simple Acorn logo.

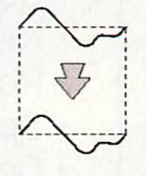
I had used the straight line tool to trace (at 10 times full size) the outline using the old logo as a guide. So I adopted the same technique with a tessellation pattern, drawing a complete path round the output of stage four of the Mansbridge School process. While doing so, I discovered another feature of *Draw*, in that when using the curved line tool, putting two nodes at the same point (easy with grid lock on, but not otherwise) allows you to go off in a new direction without affecting the shape of the line approaching that point. This is essential when moving from one side to the next in the sequence.

So, I found that I could achieve a filled shape using just *!Draw*, although a complex shape that requires a dense set of grid nodes demands great care in the 'tracing'. So now we are ready for year 5 this term, with a Tessellate folder in our clip art directory, full of shapes drawn by this technique and a set of instructions which can extend the higher achievers if they want to try their hand at creating their own shapes.

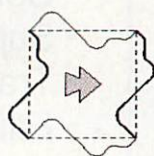
So when ideas like that from Mansbridge school appear, please print them. We may not be able to use them directly, but they stimulate.

Mr T G Pearce
Southwell, Notts

Tessellating Shapes Using !Draw



1. Switch on Grid and Grid Lock. Draw a square. Create one side of the tessellation, ensuring that it approaches the corners in such a way that overlap will not occur with the next side. Copy it to the opposite side.

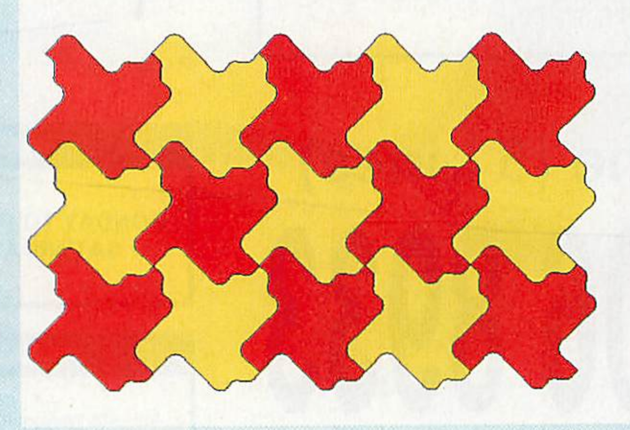


2. Do the same with the other two sides.

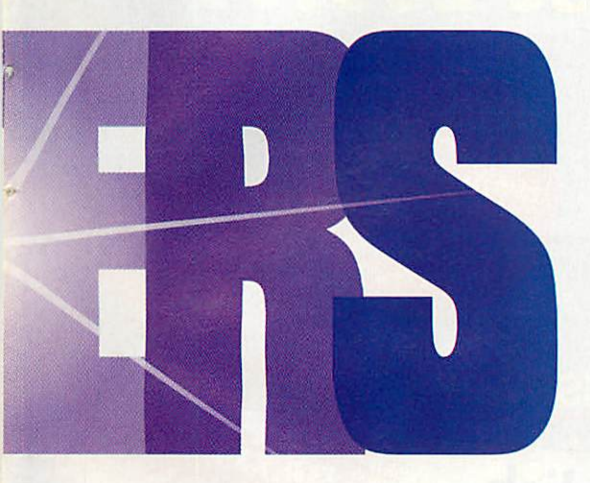
3. Starting in one corner, draw a closed shape on top of the original four sides, selecting the same node points as on the original lines. If using the curved line tool, create two node points at the junctions between sides. Finally, double click when back at the starting point. The tessellation shape is then defined by one path.



4. Move the complete shape to one side, delete all the other lines, copy the shape and fill original and copy with contrasting colours. Make repeated copies and move to jigsaw fit positions.







includes issue 1)? Well, it seems that a certain Graham Patterson feels that we should be thinking about the future and buying every machine and nik-nak that Acorn put out to support the company.

I am not going to say "Don't buy Acorn", because I firmly believe in the product, find it a far better platform in many respects than other small computers that it has been my displeasure to use and still think that, given a fair chance (though not much chance of this given the current situation), Acorn RISC OS could do a lot more for people than a certain other product ever has.

That aside, Mr. Peterson considers folk who do not buy every new item to be less than perfect, vociferous Acorn fans. I have but two words for him. Grow up! Yes, I will say that I do not possess a StrongARM, but I do currently have no less than four Acorns, only three of them having ARMs of any description (the other has a 6502A) and my faithful Madoka is now pushing three years old and my latest acquisition, an A4, is hardly new technology by Acorn's standards. Overall, I'd say Acorn haven't done badly out of me.

At every opportunity I strive to make people aware that Acorn did not die after the BBC Micro. Acorns are a viable alternative to the dross that is the PC, and I will give an opinion based on my knowledge of both platforms going back as far as I really need to. And yes, some people leave me knowing more than they did before. This is no less than other experienced Acorn fans would do, no matter which Acorn they use at the time.

To suggest that we upgrade when the company do not only ignores the superb forward planning which was done when the OS was designed initially to allow almost seamless transition from early A310s to RPCs and beyond, allowing a great deal of flexibility within the market, but reduces us to the same level as the poor folk that are forced by MickeySoft's every whim to constantly buy faster processors, bigger hard drives, more memory etc.

And yes, money is a consideration since the price of a Risc PC, even at the reduced prices that seem to prevail at the moment, knocks a large hole in your pocket. People have to live, you know; eat, drink, put clothes on their backs and such. I hope Mr. Peterson never has to know what it's like to do without, because I can tell you it is no joke and the last thing he will be thinking in such a position is where his Risc PC II is coming from.

So don't slag us off just because we aren't using the very latest kit. We're Acorn users all the same and the continuation of Acorn is as much our concern as anyone's.

Chris Johnson
madoka@argonet.co.uk

Internet search hint

Sometimes, when doing a Web search you may have thousands of results. You can, of course, refine it with more detailed search options but there is another option.

Add a totally irrelevant word to the search list, not a small word like *the* or *for* because they get filtered out anyway. Try someone's name like *Irene* or an adjective like *greatest*. This will at least give you a different slant on the results you get.

And if you're bored – and the phone bill will take it – just enter a three or four disconnected words and see what comes up.

Air your views

If there's something you want to 'get off your chest' or you have some interesting information for your fellow *Acorn User* readers, then write in to:

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Acorn Enthusiasts Group

I started the Acorn Enthusiasts Group during August 1995 and at that time it was a paper-based group; the only means of contacting members was via the phone or post.

For a small computer group with NO membership fee it was extremely hard going. The group fell apart during the beginning of 1996.

I then came up with the brain-wave of re-launching it on the Internet. The only cost was the Internet subscription (which I was already paying), so I can now run the group for only £10 a month excluding VAT.

The Acorn Enthusiasts Group now has over 300 members who are all on the Internet. It is much easier via the Net to e-mail people – I can send an e-mail to all 300 members for a 2p phone call.

Thanks must go to all the Acorn users on the Net who have joined, all the webmasters around the Net who have added links to this site without being asked and to some good friends, especially Simon Aston, who helped start this group. Also thanks to Neil Spellings for starting the Association of Acorn User Groups.

So don't forget, the next time you are connected to the Net please visit the a-e-g site and add your details – let's show the world how great the Acorn community is.

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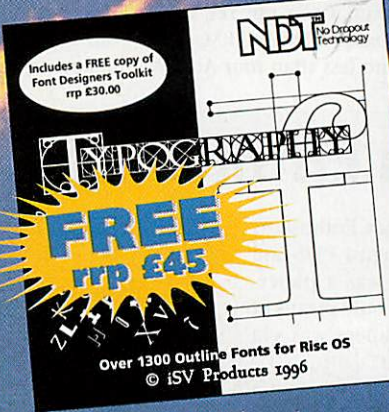
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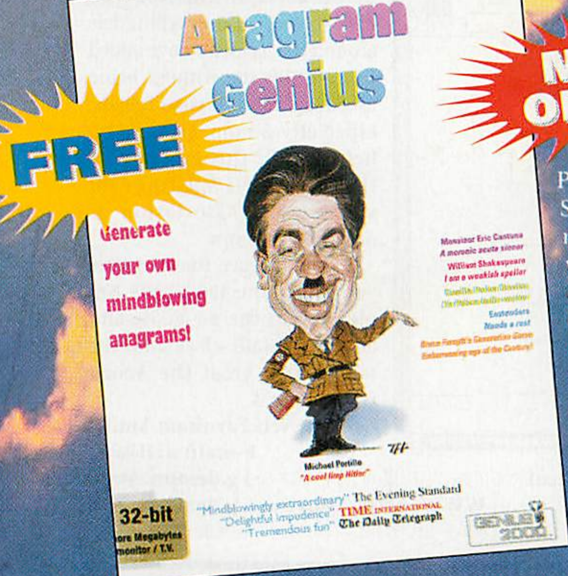
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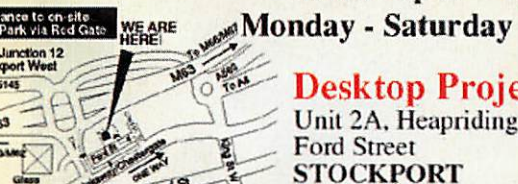
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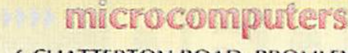
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Ray Dawson

It was 1992 and Ray Dawson and his wife Maggie were looking for work when he happened to comment to her: 'If we were paid for all the letters we have written we would earn a fortune'. From that throw-away comment came the seed of an idea that sprouted MagRay Document Services.

MagRay, run by Ray and Maggie, is a DTP and braille transcription service. You can send them text and get back a double-sided braille document. It is an important service and MagRay has some big name clients: Barclays Bank need documents for their blind executives and British Gas need bills for their blind customers, to take just two examples.

Ray used to work as a sound engineer for the BBC so got a 'deal' when the first BBC Micros came out and stuck with Acorns when they went 32-bit. He explains: 'I used to run a sound engineering department, so back in 1988 we got an Archimedes. We used them for our database and for all our DTP. There was one guy who was a brilliant software bloke; he made the Acorns talk to the big professional tape machines via serial ports and download data and store it on disc, so if they lost their memory it could be flashed back.'

Ray worked for the BBC for 23 years. He headed a sound engineering unit which serviced studios; if there were any problems, if someone wanted something designed, they did it. But then, in 1992, he was made redundant and, to make it worse, Maggie was also looking for work.

'At 44 you are looking at no employment forthcoming. Plus I was at home and I was used to having lots of people around me. We started to dabble, first by putting an advert in the local paper, using my expanded A3010. Maggie is blind, but I had only a little idea about braille. Maggie had an old PC with braille software – in those days there was none on the Acorn platform. What there *is* on the Acorn platform is a crowd of people who are able and willing to help.'

> **'Homelessness is often misunderstood. Homelessness can be either physical or mental'**

To transcribe text to braille a text file is needed so if you only have a printed page, you have to scan the page using optical character recognition software. Then the text has to be modified so it will fit to a braille page. Braille is different from written text as it has its own abbreviations, then it has to be outputted to an embosser whence you get a braille page.

At this point the interview is interrupted when Maggie and Ray's lively three-year-old son Peter bounds in asking: 'What's this?' It is explained to him that 'this' is a tin opener. Peter proceeds to run up stairs and bring me a tape for my dictaphone, then races off to play with his computer where he subscribes to *Thomas the Tank Engine* newsgroups.

Ray does volunteer work, running a homeless project: 'Homelessness is often misunderstood. Homelessness can be either physical or mental. Physical means you have no roof; mental means that you are lonely or cannot afford to heat your house. I help run a weekly drop in centre – anyone can come, there are always people to chat to, and we provide a hot meal too.'

Ray shows me some children's books he has done. These are ordinary books, but they have braille plastic overlays. This means that both sighted and non-sighted children can share the same books.

'When I first started it was scary: No pay cheque, we just waited for contracts to come in. Now I have got used to it. I would not change it – it can be a bit lonely but I am much more productive. I have learnt not to drop the bread and butter jobs for the big ones, but juggle both. I have clients all over, even one in the Lebanon.

'I cannot emphasise enough how much people are willing to help me in the Acorn market. I could not be without *Sleuth*, *Zap* and *Ovation Pro*. *Pluto* is invaluable; it makes sure I get every thing spelt right. I now even have braille software thanks to Patrick Bean. If I ever have any problems, I know I can go to the Acorn groups on the Net and someone will be willing to help, usually having had similar experiences. It is such a good community, the Acorn one.'

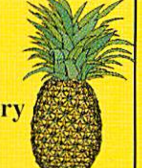
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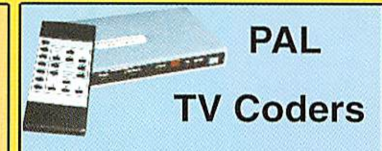
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Pineapple Software

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